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Content

Stock Market Performance and Economic Growth in Nigeria: An Empirical Analysis <i>Habiba Mohammed Bello Umar & Waliu Olawale Shittu</i>	1
Health Expenditure and Economic Growth Nexus: A Generalised Method of Moment Approach for the Case of Selected Africa Countries <i>Haruna Usman Modibbo & Abubakar Muhammad Saidu</i>	12
Investigating Retailers' Compliance with Covid-19 Curfews and Business Implications: Evidence from Minna, Nigeria <i>Mohammed Abubakar Mawoli & Abdullahi Ndagi</i>	22
Effects of Accounting Choices and Estimates on the Value Relevance Inferences <i>Aliyu Baba Usman</i>	35
Determinants of Investment in the Nigerian Economy: An ARDL Approach <i>Sadiq Alhaji Abubakar</i>	44
An Assessment of Youth Empowerment through a New Technology Innovation Adoption among Rice Farmers in Kano State, Nigeria <i>Ali Salisu, Zakari Abubakar & Hafiz Umar Bubari</i>	55
Effect of Panic Buying on Individual Savings: The Covid-19 Lockdown Experience <i>Abdulmumini Baba Alfa & Monsuratu Ohunene Gomina</i>	69
Analysis of Exchange Rate and Export Performance in Nigeria <i>Emmanuel Ifeanyi. Ajudua</i>	81
Impact of Consolidation on Employment in the Nigerian Banking Industry: 2000 - 2020 <i>James Obilikwu</i>	95
Tax Evasion and Avoidance by Entrepreneurs and Tax authority's Behaviours: Impediments to Kogi State's Economic Development <i>Jeremiah Johnson Ojochema Obara</i>	105
The effect of Sub Saharan African import Weighted Tariff policy on Foreign Direct Investment <i>Usman Alhaji Usman, Yusuf, Umar Dantama, Mika'ilu Abubakar, Maryam A. Koko</i>	122
Examining the Impacts of Boko-Haram Conflict and Food Security Status among Households in Kano Metropolis <i>Mustapha Mukhtar</i>	134

Impact of E-commerce on Customer's satisfaction of Guaranty Trust Bank Plc, Ilorin Kwara State, Nigeria <i>Ayobami Paul Abolade, Aliyu Ndalile Idris, & Mayokun Adetula</i>	148
Measuring Household Food Security based on Expenditure Surveys: Empirical Evidence from Gombe State, Nigeria. <i>Abubakar Muhammad Saidu & Haruna Usman Modibbo</i>	162
Economic Sagacity in Thomas Hardy's <i>the Mayor of Casterbridge</i> <i>Joshua Usman</i>	174
<i>An Appraisal of Mudarabah System of Islamic Investment as a Panacea to Financial Exclusion in Nigeria</i> <i>Sadiq Alhaji Abubakar</i>	178
Assessment of Public Revenue and Economic Growth in Nigeria <i>Adamu Ndanusa, Osekweyi Joel Odonye & Jiya Baba Kolo</i>	189

Stock Market Performance and Economic Growth in Nigeria: An Empirical Analysis

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Abstract

The study examines the impact of stock market performance on economic growth in Nigeria, from 1985 to 2018, based on the theoretical framework of Harrod-Domar analysis of savings and investment. The data requirements for the study was a secondary data and the methodology of the research was built on the classical analysis of Augmented Dickey-Fuller unit root test, Johansen co-integration analysis and vector error correction mechanism in order to examine the direction and magnitude of the relationship between stock market performance and economic growth in Nigeria. The findings of the study reveal a positive, long-run relationship between stock market performance (measured by market Capitalisation, equity and value-traded) and economic growth in Nigeria over the study period.

Keywords: Gross Domestic Product, Market Capitalisation, Equity, Value Traded

JEL Classification: O16, O43, O47

1. Introduction

The Nigerian stock market is a key determinant of the Nigerian financial system. Marinkovic, (2013) state that the financial market (stock market) turnover ratio and stock turnover to gross domestic product plays a causal effect on the real gross domestic product of an economy since the market facilitate financial mobilisation for investment. Stock market positively affects economic growth and significantly contributes to the growth of an economy through financial allocation and investment profile (Ikiki & Nzomoi, 2013). However, Haque, (2013) & Kasimu, (2013) states that stock market does not cause economic growth and development in Ghana and Nigeria but a bidirectional causality in Kenya as equity and value traded does not have effect on gross domestic product per capita. Pandel (2005) states that stock markets, due to their liquidity, allows investors to acquire the needed financial aids so easily and quickly, thus enable capital allocation, investment and economic boom. Financial markets contribute to economic growth by attracting investors through the provision of financial products to firms and individual which further facilitate economic growth and development (Caporale, 2004). The Nigeria stock market generate the significantly and provides important equipment for investors, individual and government which result to growth and development in the country (Valev, 2003). The central focus of economist has been mobilisation of resources for national growth and development. The

stock market is an economic institution, which promotes efficiency in capital formation and allocation (Nyong & Emenga, 1997). The rate of the economy often suffers if capital resources are not given to those economic areas, especially industries where demand is always at an increasing rate and which are capable of improving productivity and increasing production and market for goods and services (Remi, 2001). In 1961 the exchange started operations with 19 securities listed for trading. presently there are 262 securities listed on the exchange, made up of 11 government stocks, 49 industrial loan (debenture/preference) stocks and 194 equity/ordinary shares of companies, all with a total market Capitalisation stood at N287.0 billion, as at August 31, 1999. Presently, there are 139 listed equities while the all share index and market Capitalisation stood at 24,807 basis points and 1.973 trillion respectively as at December 3, 2010, in 2011 net flows (debt and equity) stood at US\$60.8billion, in 2012 US\$70.7billion, 2013 US\$72.2billion, 2014 US\$75.5billion, 2015 US\$81.5billion.

Regardless of the popular belief that democracy promotes economic activities which in turn bring about economic growth, the growth of the capital market in Nigeria is still very little in relation to the size of the economy (Echekoba, 2013). Developed economies had dug (into) both channels through which resources mobilisation affects economic growth and development – money and capital market (Demirguc-Kunt & Roos, 1996). This is nevertheless, not the case in developing economies like Nigeria, where emphasis is placed on money market with little consideration for capital market (Nyong, 1997; Sule & Momoh, 2009; Ewah & Bassey, 2009).

The performance of the Nigerian Capital Market is currently at a low, due to the global economic meltdown. Despite committed efforts to power the Nigerian economy through various long-term capital market instruments to achieve accelerated grass roots economic growth, the Market seems to be faced with various problems which hinder its performance, rate of national economic growth.

Apart from the social and institutional factors hindering the process of economic growth in Nigeria, the constraints created by the scarcity of finance to the economy establish a major setback to its growth. As a result of the mentioned constraints, it is vital to evaluate the Nigeria stock market. Thus, this research work is intended to examine the impact and contribution of the stock market to Nigeria's economic growth.

2. Literature Review

Chen (2015), who analysed the Chinese market, and concluded a positive and statistically significant risk return in SSE stocks, further revealed that conditional mean of equity return is inversely related to the conditional variance in SSE stocks. The evaluation of the impact of the financial crisis revealed that there was a positive impact on volatility of stock returns in case of Japanese, Chinese and Indian stock markets, however, in case of Hong Kong equity market, it had no impact on the volatility (Singhania & Anchalia, 2013). According to Inoguchi, (2014) some studies have argued that the 2007–2009 global financial crises affected domestic banks less in East Asia, even though the supporting evidence is rather limited. It was also found that the developed and developing markets, to which Pakistan is assigned, react to external news differently. For example the emerging markets of Asia have countered stronger in responses and extend of the reaction to the US news as compared to

the Asian developed markets (Nguyen, & Ngo, 2014). However, most of the studies focus relatively on a small period of time.

Okicic (2015) investigated the behaviour of stock returns of Central and Eastern Europe (CEE) stock markets with emphasis on the association between conditional volatility and stock returns. Findings of the study provide confirmatory evidence that ARIMA and GARCH processes provide parsimonious approximations of mean and volatility dynamics in the case of CEE stock markets. There is overwhelming confirmation corroborating the presence of a leverage effect, it means that the amount of negative shocks escalate volatility more as compared to the positive shocks do. Raza *et al.* (2015) have applied a number of GARCH family models for the valuation and foreseeing the volatility of KSE100 Index stock returns. Eleven years daily closing prices starting from 3rd of June 2002 to 31st of May 2013, total number of 2724 observations of KSE100 index have been selected and analysed. To model the conditional mean equation for KSE100 index stock returns, they have used ARMA specifications.

Usman and Alfa (2013) suggested a more comprehensive and dynamic impact of stock market on economic growth in Nigeria from 1981 to 2012, using the Augmented Dickey fuller (ADF) diagnostic test, Johansen co integration test vector error correction model (VECM) and granger causality test. The result of the stationary test shows that every series are stationary at first differential and integrated or order one (1) the result of the Johansen cointegration test shows that there is a long run relationship, given the trace statistics greater than the critical values at various rank. However the result of VECM shows a positive relationship between market Capitalisation, market size, real gross domestic product (RGDP) with the causal effect running from GDP to market Capitalisation. There is also an existence of short run relationship between value traded and RGDP with value traded surpass RGDP.

Bernard and Austin (2012) pointed out the importance of stock market development on economic growth in Nigeria, using time series data for the sample period of 1994 to 2008 and the simple OLS ordinary least square regression analysis. The result shows that stock market Capitalisation and value traded have a negative impact on economic growth in Nigeria although the significance is not statistically significant. Kolapo and Adaramola, (2012), showed that stock market have a Positive impact on economic growth with stock market granger causing economic growth in Malaysia. Mohammed et al (2008) discovered a long run relationship between stock market and economic growth.

Antonios (2010) examines the causal relationship between stock market development and economic growth for the period of 1965-2007 in Germany using vector error correction model (VECM) and the Johansen co integration analysis based on the classical unit roots tests. The results of granger causality tests showed that there is a unidirectional causality between stock market development and economic growth with direction from stock market development to economic growth.

3. Methodology

Theoretical Framework

The principal strategy for accelerating economic growth is mobilisation of savings and generation of investment. Importance or merit of Harrod–Domar model: it explains the

mechanism by which investment leads to growth and investment comes from savings. The rate of economic growth (GDP growth rate) is determined by the ability of the economy to save (savings ratio) and the capital output ratio. $Y = \Delta S / \Delta K$, Where Y is the GDP at growth factor or growth rate, S is the national savings over time, K is the output of the economy, Δ is the ratio of savings and output. $\Delta S / \Delta Y$ is ratio of investment of the economy over time. Thus, $\Delta Y / Y = s/k$ or $S=L$.

McKinnon and Shaw (1973) hypothesis affirms that financial liberalisation and stock market expansion would advance economic growth via their special effects on the growth rate of savings, investment, and consequently economic growth. McKinnon and Shaw (1973) argued that the repressed financial markets (low and administered interest rates, domestic credit controls, high reserve requirements and concessional credit practices) discourages savings, retards the efficient allocation resources, increases the segmentation of financial markets, constrains investment and in term lowers the economic growth rate. The essential message of the McKinnon-Shaw thesis is that a low or negative real rate of interest discourages savings and hence reduces the availability of loanable funds, constrains investment, and in turn lowers the rate of economic growth. On the other hand, an increase in the real interest rate may induce the savers to save more, which will enable more investment to take place and which would exert a positive effect on the economic growth.

Estimation Procedure

Augmented Dicky-fuller (ADF) was used to check the level of stationarity of the data used with either at a constant, constant and trend and at none with stationarity at level, at first difference, and at second difference of the data with a conformity of 1% , 5% and 10% level of significant respectively. The unit root test is mathematically stated as follows:

$$\Delta X_t = \mu + \alpha x_{t-1} + \sum_{i=1}^k \beta \Delta X_{t-i} + \varepsilon_t \dots\dots\dots 1$$

$$\Delta X_t = \mu + \beta t + \alpha x_{t-1} + \sum_{i=1}^k \beta \Delta X_{t-i} + \varepsilon_t \dots\dots\dots 2$$

$$\Delta X_t = \alpha x_{t-1} + \sum_{i=1}^k \beta \Delta X_{t-i} + \varepsilon_t \dots\dots\dots 3$$

where Δ denotes the first difference operator, X_t is the variable under consideration, μ is the constant term, t is the time trend, x_{t-1} is the lag of the series being tested, k denotes lag length, ΔX_{t-i} is first difference lagged series usually taken to eliminate the problem of serial correlation (Dickey & Fuller, 1979) and \mathcal{E} is the white noise process with $\varepsilon_t \sim iid(0, \sigma^2)$. The term k in this test is automatically determined by Schwarz Information Criterion (SIC) or Akaike Information Criterion (AIC) to get the optimal lag length and ensure white noise process of the residuals.

The null hypothesis of the ADF test states that the series is associated with a unit root, that is, $\alpha=0$ while the alternative is that the series is stationary, $\alpha<0$. Therefore, if the t -statistic is less than the critical values at the appropriate significance level, the series is considered to be stationary.

$$LGDP = F(LMKTC, LEQU, LVALTD) \dots\dots\dots 4$$

Where

GDP = Gross Domestic Product at its natural logarithm

L = the natural logarithm of the time series data as a result of fluctuation of the data

MRTC = Market Capitalisation at its natural logarithm

EQU = Equity at its natural logarithm

VALTD = Number of Value Traded at its natural logarithm

F = Function

$$LGDP = \beta_0 + \beta_1 LMKTC + \beta_2 LEQU + \beta_3 LVALTD + \mu \dots\dots\dots 5$$

Where

β_0 = intercept/ constant

$\beta_1, \beta_2, \beta_3$ = The coefficient of the parameters

$\beta_1 LMKTC$ = the parameter coefficient of market Capitalisation

$\beta_2 LEQU$ = is the parameter coefficient of equity

$\beta_3 VALTD$ = is the parameter coefficient of total value traded

μ = the error term of the time series data

The econometric model that is used for this research work is Vector error correction model (VECM). It is an econometric model use when variables are found to be co integrated and add error correction features into its specification, exhibit a stationarity at 1st Difference only. However, the model can be specifying as follows to examine the trend of disequilibrium that needed to be adjusted for equilibrium level of dependent variable to be achieved using the model.

$$(P_{1t}, P_{2t}) = P_t \dots\dots\dots 6$$

$$\beta = (1-\beta) \dots\dots\dots 7$$

$$\beta P_t = (1-\beta) (P_{1t}, P_{2t}) = \beta P_{1t} - \beta_2 P_{2t} \dots\dots\dots 8$$

The data for this research work is sourced from secondary means of some relevant macro-economic indicators such as Central Bank of Nigeria Statistic Bulletin from the period of 1985-2019.

4. Result

This section focuses on results presentation and interpretation base on vital econometric and statistical techniques of analysis as it was stated in chapter three to facilitate the achievement of the research objectives.

Table 1: ADF Unit Root Test

	Level	1 st Difference	Level	1 st
	Difference			
	Constant		Constant + Trend	
LNGDP	-2.378	-3.283***	0.537	-4.331***
LNMKTC	-1.013	-4.215**	-3.073	-4.215**
LNEQU	-0.904	-5.096***	-2.649	-5.481***
LINVALTD	0.939	-4.033***	-2.785	-4.069**

Note: *, **, *** represent 10%, 5% and 1% level of significance, respectively The figures are the t-statistics for testing the null hypothesis that the series is stationary The lag length is determined automatically based on Schwarz information criteria. The critical values for intercept without trend are -4.284580, -3.562882 and -3.215267 whereas, for intercept with trend the values are -3.661661, -2.960411 and -2.619160 for 1%, 5% and 10% respectively.

From Table 1 above, the variables indicates stationarity at 1st difference respectively. This implies that the data used in the model are stationary by rejecting the null hypothesis of non-stationary time series data. The stationarity of the data enable us to further conduct the Johansen co integration test to see if there is long run relationship among the variables used in the model.

Johansson Co integration Test

Table 2: Johansson Test of Co integration

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesised		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.849	62.483	27.584	0.000
At most 1 *	0.781	50.165	21.132	0.000
At most 2	0.267	10.268	14.265	0.195
At most 3	0.004	0.117	3.841	0.733

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

As presented by Johansson co integration test of TRACE value, it indicates 2 co integration variables which implies that there is a long-run relationship among the variables used in the model, this denote the rejection of the null hypothesis of no long-run relationship among the variables in the model. The result of the long run relationship as revealed by Johansen test,

implies that the variables modeled have a long run effects in explaining the impact of stock market and economic growth in Nigeria over the period under study.

Table 3: Vector Error Correction Model (VECM) Analysis

Error Correction:	D(LNGDP)	D(LNEQU)	D(LNMKTC)	D(LNVALTD)
CointEq1	-0.595475 (0.14701) [-4.05064]	0.764034 (0.37922) [2.01473]	0.279553 (0.25702) [1.08765]	-1.536549** (0.51201) [-3.00099]
D(LNGDP(-1))	0.985999 (0.25407) [3.88076]	-1.268959* (0.65541) [-1.93612]	-0.361842 (0.44422) [-0.81456]	2.645452*** (0.88491) [2.98950]
D(LNGDP(-2))	0.927479 (0.23946) [3.87321]	-3.027109*** (0.61772) [-4.90048]	-0.356612 (0.41867) [-0.85178]	2.546495*** (0.83402) [3.05329]
D(LNEQU(-1))	-0.013248 (0.04479) [-0.29579]	0.056747 (0.11554) [0.49114]	0.014126 (0.07831) [0.18038]	-0.032523 (0.15600) [-0.20848]
D(LNEQU(-2))	-0.029724 (0.04388) [-0.67741]	0.103335 (0.11319) [0.91291]	-0.031459 (0.07672) [-0.41006]	-0.245161 (0.15283) [-1.60417]
D(LNMKTC(-1))	-0.315064 (0.11996) [-2.62641]	-0.100227 (0.30945) [-0.32389]	-0.549735 (0.20974) [-2.62109]	-0.771479 (0.41781) [-1.84649]
D(LNMKTC(-2))	-0.171171 (0.14260) [-1.20036]	0.561859 (0.36785) [1.52740]	-0.084156 (0.24932) [-0.33755]	-0.748710 (0.49666) [-1.50748]
D(LNVALTD(-1))	0.088285 (0.14567) [0.60608]	1.171484** (0.37576) [3.11762]	0.594794 (0.25468) [2.33547]	-1.413725* (0.50734) [-2.78654]
D(LNVALTD(-2))	-0.069299 (0.12387) [-0.55947]	0.473132 (0.31953) [1.48072]	0.103742 (0.21656) [0.47904]	-0.992049 (0.43141) [-2.29953]
C	0.368617 (0.11275) [3.26943]	-0.258760 (0.29084) [-0.88969]	0.231238 (0.19712) [1.17306]*	1.652667** (0.39269) [4.20862]
R-squared	0.900358	0.809998	0.547342	0.443025
Adj. R-squared	0.859595	0.732269	0.362164	0.215171
F-statistic	22.08776	10.42089	2.955760	1.944341

Note: standard errors are presented in parentheses while the t-statistics are in the brackets; The corresponding values of 10%, 5% and 1% levels of significance are the t-statistics values of $1.65 \leq t < 1.96$, $1.96 \leq t < 2.56$, and $t \leq 2.56$, respectively

From table 4, the result of the Vector Error Correction Model (VECM), cointEq is the speed of adjustment from disequilibrium to equilibrium level. The cointEq of GDP is negative and significant at -0.595475 showing that the speed of adjustment can be in 59% in the long run.

The cointEq of equity is positive and significant at 1% while market Capitalisation is positive although significant and also value traded is negative and significant at 1% respectively. However, the variables were significant at various levels given the lag 1 and lag 2 of the model. At lag 1 GDP is positive and significant at 1% also in lag 2; equity is positive although not significant at both lag 1 and lag 2; market Capitalisation is negative and significant at 5% at lag 1 though not significant at lag 2; value traded is negative and significant at 1% at lag 1 while it is significant at 5% in lag 2 as revealed by the model.

The analysis of stock market and economic growth as revealed by the model is contrary to the outcome of Usman and Alfa (2013), who investigated the impact of stock market and arrived at positive and significant relationship between market Capitalisation and economic growth in Nigeria using time series data and Vector Error Correction Model span 1981 to 2012. However, the result is in line with Autonio (2010) who study the impact of stock market and economic growth in Germany and arrived at negative relationship between value traded and economic growth span 1965 to 2007.

R^2 of the model stood at 0.90 or 90% in explaining the variation of the explanatory variables of the model in explaining the dependent variable of the model, this explains the goodness-fit of the regression model in analysing the impact of stock market on economic growth of Nigeria. The adjusted R^2 also measures the good fit of the model, however, not sensitive to fluctuation of variables used in the model and it stood at 0.85 or 85% in explaining the model. The f-statistic measures the total significant of the independent variables in analysing the relevant of the model and it account for 22.08 as indicated in the model.

Discussion of Results

The empirical results presented above shows the analysis of the variables in explaining the impact of stock market on economic growth of Nigeria. The unit root result explains the level of stationarity of the variables under consideration, the ADF result as presented above, indicated that the data are stationary at 1st Difference with 1(1) order of con integration in line with Alfa and Usman (2013). The stationarity of the data implies that the data can be used for empirical analysis with the rejection of null hypothesis at 0.05 level of non-stationary of time series data. The result of Johansen co integration test indicates that there exist at most 2 co integration among the variables which means there is a long-run relationship among the variables included in the model. The Vector Error Correction Model explains that, there is a significant relationship between stock market and economic growth with the variables included in the model. The significance of the model as indicated by level of significance, shows that the model with the variables used are relevant in explaining the impact of stock market on economic growth of Nigeria in line with Autonio (2010) who studied the impact of stock market and economic growth in Germany and arrived at negative relationship between value traded and economic growth span 1965 to 2007.

The correlation result also indicates a positive correlation among the variables except value traded and equity which means as one increases in absolute term the other decreases in absolute term as indicated in the model. The serial correlation test indicates the rejection of the null hypothesis of serial correlation and accepts the alternative of no serial correlation in the model through the p-value. The heteroskedasticity test also passed the test of problem of

autocorrelation as the result revealed that the model is free from autocorrelation through its p-value as indicated in the model.

5. Conclusion and Recommendation

The study examines the impact of stock market on economic growth in Nigeria between the period of 1895 and 2016, using vector error correction model (VECM). The study, from the regression results shows the existence of positive and significant relationship between stock market and economic growth and this relationship is statistically significant. This means that the impact of stock market on economic growth is strong and significant.

Due to the important role that well structured stock markets play in economic growth, it is concluded that, Nigerians cannot afford to de-motivate the development of its stock exchange. Accounting, legal regulatory, tax and supervisory system influences stock market illiquidity. The efficiency of trading systems influences the ease and confidence with which investors can buy and sell their shares. How fast the Nigerian stock exchange moves to assume its rightful position as a major provider of long term finance needed for Nigeria's rapid economic development will depend on how fast the major problems hindering its growth are solved. Stock market is positive and significant in the growth engine of Nigeria economy through its financial mobilisation and reduction in unemployment rate in the country. Stock market through the empirical analysis revealed that, the growth of a nation is somewhat depends on its financial market such as stock market and other security market as revealed by the empirical study of this research work.

Finally, the following recommendations should be properly implemented for sustainable growth and development in Nigeria. The government should provide a stable macro-economic environment for the smooth running of the market and give important role to the stock market development by creating effective monetary and fiscal policy management. It is recommended that both formal and informal bodies should partake on the benefit on stock market through participation and incentives from the government. Stock market plays a significant role in fund mobilisation, thus, government should play a significant role in modeling the market for better growth and improvement on the market to achieve efficiency. Market forces should be allowed to operate without restriction, interference as security pricing is harmful to the growth of the market. The time span between offering shares for public subscription and allotment of the shares should be adjusted that is the time span between offering shares for public subscription and allotment of the shares is long this would discourage investors.

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Health Expenditure and Economic Growth Nexus: A Generalised Method of Moment Approach for the Case of Selected Africa Countries

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Abstract

This study empirically examined the impact of health expenditure on economic growth in 45 selected African countries over the period of 2000 to 2017. The study employed panel dynamic Generalised Method of Moment (GMM) techniques and the results of both differenced GMM and system GMM estimates showed that health per capita expenditure has positive and statistically significant impact on economic growth in Africa. Hence, health expenditure and provision of social services by governments at all levels in all countries should not be seen as a cost that need to be curtailed but rather as another means of achieving greater economic growth in the selected African countries. Therefore, the study recommends that governments and health related donor agencies should specifically increase the level their spending on community health and medical services as this may improve the efficiency and effectiveness in relation to prevention, diagnosis and treatment of diseases that hampered human capital development and consequently economic growth in Africa.

Keywords: Health Expenditure, Economic Growth, GMM, Africa.

JEL Classification: H51, O40, C23, O55.

1. Introduction

Development experts have long recognised health as an important factor in the development process of any country. In other words, as a component of human capital, health is essential to a productive society. It is in view of this assertion that the WHO's Commission on Macroeconomics and Health (CMH, 2001) made a powerful case in favour of investment in health as an important driver of economic growth. Generally, investment in health can reduce the burden of preventable and treatable diseases that, on macroeconomic level, can be a drag to national economies and, on microeconomic level, a drain on household and individual incomes.

However, given its huge human resource potentials, no other region of the world has so much chance to benefit from investment in health than African region. As rightly argued by WHO (2017), while good health can drive social and economic growth, ill-health can push people into poverty trap which in turn, hampers development. Therefore, health must constitute a central pillar of any coherent vision of African development, and that

investments in health must include those in health-related sectors such as water, sanitation, education and environmental protection.

Unfortunately, a report by World Health Organisation (WHO, 2017), revealed that with over 16% of World' population, Africa bears 25% of the world's disease burden but its share of global health expenditures is less than 1%. Thus, it is obvious that Africa still faces serious challenges in terms of healthcare financing. For example, it was only five Sub-Saharan African (SSA) countries that have struggled to live up to their commitment to allocate as much as 15% of their budgets to the health sector in line with the "Abuja Declaration" target. These are: Rwanda, Botswana, Malawi, Burkina Faso, and Liberia as reported by the United States Agency for International Development (USAID, 2010). Therefore, government interventions in the provision of healthcare across African countries have not been remarkable. Even the little investment in health is affected by leadership and governance challenges as well as rampant corruption in the procurement of medical products and technologies. This has shown the extent to which the role of health is being neglected in many African countries which is equally detrimental to rapid economic growth and development in Africa.

In view of the above, various studies have been conducted to explore the connections between health expenditure and economic growth in Africa. However, while some of these studies were largely on single country and regional basis (e.g. Inuwa & Modibbo, 2012; Mehrara, Fazaeli, Fazaeli, & Fazaeli, 2012; Gisore, Kiprop, Kalio, Ochieng, & Kibet, 2014; Boussalem, Boussalem, & Taiba, 2014, etc), others examined the impact of health expenditure on health outcomes (e.g. Anyanwu & Erhijakpor, 2009; Yaqub, Ojapinwa, & Yussuff, 2012; Odhiambo, 2014). Only few studies examined the cross-country impact of healthcare expenditure on economic growth in Africa (e.g. Tolulope & Taiwo, 2014).

The objective of this study, therefore, is to examine the impact of healthcare expenditure on economic growth in Africa thereby adding on the scanty literatures that studies the whole of Africa. The remaining part of the paper covers the following: section two reviews the literature. While section three discusses the methodology, section four presents and analyses the results. Finally, section five concludes the study with summary of the findings and offers recommendations.

2. Literature Review

The role of health in the development process has been widely acknowledged both on theoretical and empirical basis. For instance, Bloom and Canning and Sevilla (2001; 2004) argued that healthy people are more productive and have higher incentives to save and invest in their abilities. However, the extent to which people are healthy and productive is partly a function of health inputs such as healthcare expenditure and nutritional intake which in turn influences economic growth and development. On cross-country basis, Tatoğlu (2011) examined the relationship between investment in human capital and economic growth in the 20 OECD countries both at group and individual specific level over the period of 1975 to 2005. The findings, however, revealed that increase in health expenditure causes an increase in the economic growth for all the countries both in the short and long runs where a unit increase in health expenditure increases GDP by about 0.33%.

Similarly, Mehrara, Fazaeli, Fazaeli, and Fazaeli (2012) examined the long run relationship between health expenditure and GDP within the framework of Pedroni panel cointegration. A sample of 13 MENA countries was studied using data spanning from 1995 to 2005 and the results revealed the existence of a long-run equilibrium relationship between healthcare expenditure and GDP. Again, Gisore, Kiprop, Kalio, Ochieng, and Kibet, (2014) have empirically investigated how government expenditure contributes to economic growth in East Africa from 1980 to 2010 and their findings based on Fixed Effect model showed that expenditures on health has positive and statistically significant effect on growth. Furthermore, Cebeci and Ahmet (2016) investigated the effect of health on economic growth using data of BRICS countries and Turkey for the period of 2000 to 2014. The results of Pedroni panel cointegration test confirmed the existence of long run relationship between health expenditure and economic growth and that the former has significantly positive effect on the later.

Contrary to the above studies, Tolulope and Taiwo (2014) examined the contribution of health inputs and outcomes to growth process in the Sub-Saharan Africa using a panel data of 30 countries spanning from 1995 to 2011. Based on Dynamic Generalised Method of Moment (GMM) modeling framework, the results of the study showed that government expenditure on health has statistically significant negative effects on economic growth. Also, Kulkarni (2016) examined the differences in the healthcare systems of five emerging economies of BRICS using panel data from 1995 to 2010. The results, based on Fixed Effect model, revealed that increase in public health expenditure is not sufficient to achieve the desired improvement in health outcomes and consequently economic growth.

3. Methodology

Sources of Data

The panel data set for this study consists of annual time series spanning from 2000 to 2017 for Forty Five (45) African countries. These data were sourced from the publication of World Development Indicators (WDI, 2017). However, what informed the sample size and the selection of countries was purely the availability of data. The countries comprise: Angola, Cameroon, Central Africa Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon, Burundi, Comoros, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Uganda, Zambia, Zimbabwe, Algeria, Egypt, Morocco, Sudan, Tunisia, Botswana, Lesotho, Namibia, South Africa, Swaziland, Benin, Burkina Faso, Ivory Coast, Gambia, Ghana, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

Variables Measurement

Within the context of macroeconomic studies, to examine the impact of health expenditure on economic growth, the variables of the study must satisfy two requirements. First, the data must extend into the past to encompass most of the transition in health. Second, the variables must be interpreted as an aggregate or as an average because of the macroeconomic context of the study. Therefore, for the purpose of this study, the variables of interest have made these conditions and they are broadly categorised into two as follows: The dependent variable of this study is economic growth which is measured by Real Gross Domestic Product (RGDP). It is an inflation-adjusted measure that reflects the value of all

goods and services produced by an economy in a given year, expressed in base-year prices, and is often referred to as "constant-price," or "inflation-corrected" GDP. This is in line with the work of Gisore, *et al.* (2014). It is measured in US Dollars at constant price taking 2015 as the base year.

The main independent variable of this study is health expenditure, followed by Net Official Development Assistance and Population Growth Rate as control variables. Per Capita Health Expenditure was employed to examine the impact of health expenditure on economic growth in Africa and it is measured in US Dollars at constant price taking 2015 as the base year. This follows the works of Cebeci and Ahmet (2016), and Mehrara *et al.* (2012). Official Development Assistance may be in the form of grants, soft loans, provision of technical assistance received by developing countries from donors and other multilateral development agencies in form of aid. It is measured as a percentage of Gross National Income (GNI) in million USD constant prices, using 2015 as the base year (OECD, 2019). Finally, Population Growth Rate is measured as the exponential rate of growth of midyear population from year $t-1$ to t , expressed as a percentage. Here, population is based on its de-facto definition, which counts all residents regardless of legal status or citizenship.

Method of Data Analysis

The study employed Generalised Method of Moments (GMM) which is more appropriate in the case of large N and small T . The GMM estimator is a Dynamic Panel Data (DPD) estimation technique in which the lagged dependent variable is considered among the regressors in a panel with large N and short time span. It was developed by Arellano and Bond (1991) and later extended by Arellano and Bover (1995) and Blundell and Bond (1998). However, GMM estimator captures only short-run dynamics because it is mostly restricted to short time-series in which the stationarity of the variables is less important (Samargandi, Fidrmuc, & Ghosh, 2014). Therefore, for the purpose of this study, the following GMM model is formulated to examine the dynamic impacts of health expenditure and health indices on economic growth in the selected African countries:

$$LRGD_{it} = \alpha_i + \beta_1 LRGD_{it-1} + \beta_2 PCHEX_{it} + \psi Z_{it} + \varepsilon_{it} \dots \dots \dots 1$$

Where $LRGD_{it}$ represents the economic growth of i^{th} country at time t ; β 's are the parameters to be estimated; $LRGD_{it-1}$ is the lagged of dependent variable, that is, the economic growth of i^{th} country at time $t-1$; α_i is the country-specific effects which is assumed to be independent and constant across the countries; $PCHEX_{it}$ represents per capita health expenditure; ψZ_{it} are the set of control variables; and ε_{it} is the error term which is also assumed to be distributed independently in all periods of the country i . However, with lagged dependent variable as a regressor, a correlation is said to exist between it and the error term. In this case, the dynamic nature of the data, which is a fundamental issue in the empirical growth literature, could not be captured by the static panel models such as pooled OLS, fixed effects and random effects models which assumed strict exogeneity among the explanatory variables (Samargandi, Fidrmuc, & Ghosh, 2014).

In view of the limitations of static panel models, therefore, Arellano and Bond (1991) proposed taking the first difference of equation (3.1) in order to eliminate the constants, that

is, α_i and ε_{it} , so that in later periods, there should be additional lagged values of the instruments that are available. However, a potential weakness in the Arellano-Bond GMM estimator was identified in the later work of Arellano and Bover (1995) and Blundell and Bond (1998). According to them, the lagged level variables are often poor instruments for the first differenced variables, particularly in situations whereby the variables are close to a random walk. Consequently, they modify and expanded the original Arellano-Bond GMM estimator by including both lagged levels and lagged differences. Hence, the original Arellano-Bond GMM estimator is called Difference-GMM estimator while the extended version of it commonly termed as a System-GMM estimator (Baum, 2014).

Diagnostic Checks

Generally, GMM estimator strongly depends on the validity of the instruments for it to be consistent. To ensure this consistency, Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) suggested the following specification tests:

Test of Over-identifying Restrictions

This is known as Sargan test of over-identifying restrictions. It tests the overall validity of the instruments by analysing the sample moment conditions used in the estimation process. By following the work of Inuwa (2017), the test statistics for the GMM estimator in the first-differenced model can be estimated as follows:

$$S = \nu' Z \left(\sum_{i=1}^N Z_i \nu_i \nu_i' Z_i' \right)^{-1} Z' \nu \tilde{\alpha} \chi_{p-k}^2 \dots\dots\dots 2$$

Where $\nu = y - X\delta$, and δ is a two-step estimator of δ for a given Z. it should be noted that Z is not necessarily a set of optimal instruments; p stands for number of columns in Z provided $p > k$. According to Inuwa (2017), a version of serial correlation test can be obtained based on a one-step estimator of δ which may be asymptotically normal under the general distributional assumptions, but a robust chi-square Sargan test based on one-step estimates may not be available. The null hypothesis of Sargan test statistics is given as follows:

$$S_1 = \frac{1}{\sigma^2} \tilde{\nu}' Z \left(\sum_{i=1}^N Z_i H_i Z_i' \right)^{-1} Z' \tilde{\nu} \dots\dots\dots 3$$

Where $\tilde{\nu}$ stands for one-step residuals which has a limiting chi-square distribution only if the errors are iid over time and across individual units. However, under the null hypothesis that the moment conditions are valid, S_1 is asymptotically chi-squared distributed with $m_d - k$ degrees of freedom, where m_d represents the number of moment conditions and k the number of estimated parameters (Blundell, Bond, and Windmeijer, 2000 in Inuwa, 2017).

Arellano-Bond Test for Autocorrelation

This test examines the hypothesis that the first differenced error term (ε_{it}) is not serially correlated at second difference. The expectation is that the differenced error term may exhibit a first-order serial correlation even if the original error term is not (Eggoh, Houeninvo, & Sossou, 2015). This is because Δv_{it} is mathematically related to Δv_{it-1} via the shared v_{it-1} term. Therefore, given a system difference-level regression, in addition to testing for first-order serial correlation in levels, there is a need to also check whether the

differenced error term is second-order serially correlated. This, according to Roodman (2009), will detect the existence (or otherwise) of correlation between the v_{it-1} in Δv_{it} and the v_{it-2} in Δv_{it-2} .

Also, following the work of Inuwa (2017), the test statistics for second-order serial correlation based on residuals from the first-difference equation takes the form:

$$AR(2) = \frac{\bar{V}_2 \bar{V}_2'}{\bar{V}_2'} \tilde{a}N(0,1) \tag{4}$$

Under the assumption that $E(v_{it} v_{i(t-2)}) = 0$, and \bar{V} is given by:

$$\bar{V} = \sum_{i=1}^N v_{i(-2)} - 2\bar{V}'_2 X_* (X' Z_A Z' X)^{-1} X' Z_A \left(\sum_{i=1}^N Z_i v_i \bar{V}'_{i(-2)} \right) + \bar{V}'_2 X'_* \bar{V}_2 \tag{5}$$

It should be noted that the test for AR(2) is only applied if $T_i \geq 5$, and the asymptotic power of the test strongly depends on the efficiency of the estimators used. The AR(2) statistics tests for lack of second-order serial correlation in the first-difference residuals. However, this will only be the case if the errors in levels are not serially correlated, or they follow a random-walk process. In any case, Arrelano and Bond (1991) argued that the two situations can be separated by computing an AR(1) statistic, in a similar way as AR(2), to test for lack of first-order serial correlation in the differenced residuals.

4. Results

This section presents, interprets and analyses the results of the study. It also discusses the major findings with particular reference to the results of previous studies.

Descriptive Statistics of the Data

Table 1: Descriptive Analysis of Variables for All Countries (Combined Panel)

Time Period: 2000 – 2017 (45 Countries)					
<i>PCHEXP</i>	810	47.6897	81.7421	0.2366	496.2134
<i>LNODA</i>	810	19.7112	1.3725	12.2061	23.1508
<i>POPGR</i>	810	2.4604	0.9039	-2.6287	5.5391
Countries with Minimum/Maximum Values					
Variables	Minimum		Maximum		
<i>PCHEXP</i>	Democratic Republic of Congo		Seychelles		
<i>LNODA</i>	Equatorial Guinea		Nigeria		
<i>POPGR</i>	Seychelles		Rwanda		

Source: World Development Indicators (World Bank, 2017)

Author's computation using STATA version 14, extracted from appendix I, (2019)

Table 1 above presents the descriptive statistics of variables over the period of 2000 to 2017 which covers 45 African countries. The results revealed that the average value log of per capita health expenditure over the study period was about US\$47.69 with a large standard deviation of about US\$81.74. The country with the highest per capita health expenditure was Seychelles in 2017 with a value of about US\$496.21 followed by South Africa in 2011 with about US\$325.18 value of per capita health expenditure. On the other hand, Democratic Republic of Congo was the country with minimum per capita health expenditure of about US\$0.24 only recorded in the year 2000. This has justified the large value of

standard deviation obtained in the result which indicates that in most of the selected countries, their respective per capita health expenditure is below the mean value over the period of the study.

In the case of log of net overseas development assistance, the average value received by the selected countries over the study period was about US\$19.71 with a standard deviation of about US\$1.37. On individual basis, countries that received the lowest and highest values of development assistance were Equatorial Guinea (US\$12.21) and Nigeria (US\$23.15) in the year 2014 and 2006, respectively. Finally, with respect to population growth rates, the average was about 2.46 in the studied countries with a standard deviation of about 0.90. Seychelles recorded the minimum population growth rate of -2.63 in 2011, while the highest growth of about 5.54 was reported in Rwanda in the year 2000, followed by Liberia in the same year 2000 and Sierra Leone in 2003 with a population growth rate of 5.34 and 4.77 respectively.

Estimations of Panel Generalised Method of Moments

Table 2: Results of Two-Step Panel Generalised Method of Moments

Dependent Variable: Log of Real Gross Domestic Product (RGDP)		
Independent Variables	Difference GMM	System GMM
<i>RGDP_{t-1}</i>	0.858942 ^{***} (0.0165)	0.921156 ^{***} (0.0017)
<i>LPCHEXP</i>	0.061830 ^{***} (0.0062)	0.021184 ^{***} (0.0005)
<i>LNODA</i>	0.017392 ^{***} (0.0021)	0.013278 ^{***} (0.0003)
<i>POPGR</i>	0.021850 ^{***} (0.0026)	0.020281 ^{***} (0.0005)
Diagnostics Tests		
Number of Observation	720	720
Number of Countries	45	45
Sargan Test	39.83751 [0.5222]	40.07080 [0.5559]
Arellano-Bond AR(2) Test	-1.284977 [0.1988]	0.035131 [0.3467]

Source: Author's computation using Eviews version 9, extracted from appendix IV, (2019).

Note: Figures in () and [] are standard errors and probability values respectively. ^{***}, ^{**} and ^{*} indicate significance at the 1%, 5% and 10% levels respectively.

From the results presented in table 4.2 above, the diagnostic tests used are the Arellano-Bond Autocorrelation test and Sargan test for over-identification. Under the results of Difference GMM, the p-value for the second-order Arellano-Bond (AR2) test (0.1988) is greater than 0.05 indicating that the null hypothesis of no serial correlation in the first difference errors cannot be rejected. Also, Sargan test for over-identification restriction validity shows that the null hypothesis cannot be rejected with a p-value of. Thus the GMM model employed is said to be specified correctly and that the instruments used in the model are equally valid.

In relation to the estimated coefficients, the coefficient of one period lagged dependent variable is statistically significant at 1% level indicating that this year's growth performance

is, among other factors, determined by the previous year's economic performance which confirms the assumption of dynamic nature of economic growth in across the studied countries. Similarly, the results show that per capita health expenditure has positive and statistically significant effect on economic growth in Africa at 1% level which is in line with the a priori expectation. Specifically, an increase in per capita health expenditure by 1% would increase economic growth by about 0.06%. The magnitude of this result is, however, very small which explains the degree of effectiveness with which the money allocated to health sector is being utilized. Furthermore, the coefficients of the control variables, that is, net overseas development assistance and population growth rate have exhibited positive and statistically significant signs at 1% level showing that a 1% increase in each, will increase economic growth in Africa by about 0.02% respectively.

In a similar way, the results of System GMM confirm that of Difference GMM. The Sargan test is performed to test the validity of the instruments and based on the results; the instruments of the model are valid. Similarly, the results have no serial correlation based on Arrelano-Bond serial correlation test. Still the coefficient of per capita health expenditure has positive and statistically significant effect on African economic growth where a 1% increase in per capita health expenditure increases economic growth by about 0.02%. Also, net overseas development assistance and population growth rate maintained their positive and statistically significant signs indicating that a 1% increase in each increases economic growth in Africa by about 0.01% and 0.02% respectively.

Discussion of Finding

Although the long-run relationship between health expenditure and economic growth is well established in the works of Tatoğlu (2011) for OECD countries, Mehrara *et al.* (2012) for 13 MENA countries, Cebeci and Ahmet (2016) for BRICS countries and Turkey, this could not be confirmed in African countries due to insufficient data on health expenditure. As a result, this study employed linear dynamic panel GMM model to examine the impact of health expenditure on economic growth in Africa. Based on the results of differenced GMM and system GMM estimations, as presented in table 4.2, it was revealed that health expenditure has positive and statistically significant impact on economic growth in Africa. This has buttressed the findings of Tatoğlu (2011) for 20 OECD countries, Mehrara, Fazaeli, Fazaeli, and Fazaeli (2012) for 13 MENA countries, Cebeci and Ahmet (2016) for BRICS countries and Turkey as well as Gisore, Kiprop, Kalio, Ochieng, and Kibet (2014) for Eastern Africa. However, the findings of this study contradicted the works of Tolulope and Taiwo (2014) who found health expenditure to impact negatively on the economic growth of Sub-Saharan Africa and Kulkarni (2016) who reported that increase in health expenditure is not sufficient to improve health outcomes and consequently economic growth.

5. Conclusion and Recommendation

Based on the findings obtained, this study concluded that health expenditure is among the factors influencing economic growth in Africa. This suggests that ensuring quality of life of the population in terms of health is one of the preconditions for increasing productivity and economic growth. Hence, the policy implication is that, health expenditure and provision of social services by governments at all levels in all countries should not be seen as a cost that needs to be curtailed but rather as another means of achieving greater economic growth in

the selected African countries. Therefore, the study recommends that governments and health related donor agencies should specifically increase the level their spending on community health and medical services as this may improve the efficiency and effectiveness in relation to prevention, diagnosis and treatment of diseases that bedeviled some of the studied countries like Sierra Leon, Nigeria, and Niger which hampered human capital development.

This study has empirically examined the impact of health expenditure on economic growth in Africa. However, the study has not been exhaustive as many issues still deserve further attention in future research. For instance, the long-run relationship between health expenditure and economic growth in Africa could not be established due to insufficient data on the later variable. This can be examined by future studies when sufficient data is available. Also, differences in the impact of health expenditure on economic growth across African countries have not been examined. Therefore, future studies can examine the country-specific impact of health expenditure on economic growth in Africa by using techniques such as Seemingly Unrelated Regressions Equations (SURE) model.

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Investigating Retailers' Compliance with Covid-19 Curfews and Business Implications: Evidence from Minna, Nigeria

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Abstract

Covid-19 (C-19) lockdowns in Niger State was aimed at curtailing spread of Corona Virus in the State as well as protecting lives of citizens in general, and retailers and their customers in particular. However, the effectiveness of the initial phase of the lockdowns and its impact on the retail sub-sector of the local economy call for interrogation and investigation. Thus, this study examined the perceived enforcement of C-19 curfews in Minna metropolis, the retailers' compliance with the C-19 curfews, and the gains and/or losses recorded by the retail sub-sector among others. The study surveyed 51 retailers of daily needs spread across 17 districts in Minna in April-2020 and obtained research data via schedule-structured interview. Following descriptive data analysis and Pearson Correlation test, the study found that the retailers were well informed about the C-19 curfews; nonetheless the retailers opened shops regularly because C-19 curfews were partially enforced, which endangered the lives of salespeople and patronising customers more so that protective measures by the retailers were largely ignored. Also, the C-19 curfew posed huge threats to the retail outlets which made them suffered declined patronage, sales turnover and profit as well as scarcity of inventory supplies, hike in transport fare, and inflated price of supplies, among others. Essentially, the study found significant positive correlation between reality of C-19 and adherence to protective measures. The study, therefore, recommends that Niger State Government should ensure adequate enforcement of the pandemic related curfews in order to protect lives of the retailers and their customers involved in commerce now and in future.

Keywords: Virus, Death, Retail Business, Customers, Government, Curfew

JEL Classification: M31

1. Introduction

Globally, government and industrial activities have been largely scaled down due to the emergence of the novel Corona-virus disease in November 2019. Corona-virus disease otherwise codenamed COVID-19 is caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-COV-2) and is highly contagious and declared pandemic by the World Health Organisation (WHO). COVID-19 (C-19) spreads primarily through droplets

of saliva or discharge from the nose when an infected person coughs or sneezes. Being a contagious disease, physical contact of people is regulated (with closures of all public facilities and business premises) to avert unprecedented spread especially that no cure has been discovered for the disease.

C-19 originated in Wuhan, China in the last quarter of 2019, and spread to continents including Africa in the first quarter of 2020. In particular, the index case in Nigeria and Niger State were recorded on the 29th February, 2020 (an Italian who arrived Lagos from Milan) and 9th April, 2020 respectively. Consequently, Niger State Government took preventive measures by first ordering closure of all schools effective from 17th March, 2020 and later imposing indefinite total lockdown of the State effective from 25th March, 2020; the curfews were relaxed for some few hours in at least two days per week in the initial phases of the lockdown and later extended to daytimes (8am – 8pm) in every three days per week in the last phases of the lockdown. The lockdown were aimed at keeping everyone at home, restricting movement of people, and stopping public gathering in large numbers in order to prevent the spread of the virus from person to person in work places, markets, worship centers and communities.

Ideally, the imposed curfews ought to be enforced by the government security agencies for the attainment of total compliance, while violators need to be prosecuted to serve as deterrent to members of the public. During such lockdowns, all micro, small, medium and larger business enterprises (MSMEs) in the formal and informal sectors of the economy (except the few exempted ones, for example private hospitals, pharmacies, medical supplies, and public utility service providers) are not expected to open for business so as not to defeat the aim of the lockdown (WHO, 2020;). However, the observed situation in the first one month of the lockdown differs from the ideal situation: police visibility and surveillance in the Minna suburbs and districts were nearly absent, street hawkers and retail shops were active, customers went out for shopping, and tricycles and motorcycles transported retail supplies within the Metropolis. These observed abnormalities provoke questions such as: Are the retailers really aware about the C-19 curfews in Minna? Are they aware about the modes of contracting the disease, its symptoms and dangers? Are the preventive measures adhered to during business operations by the retailers and their customers? What are the implications of the lockdown to the operational performance of the retail enterprises? Thus, the need to verify the aforementioned observations stimulated this empirical study.

Furthermore, accessible empirical studies on C-19 were conducted outside Nigeria; for example, the works of Hadianfar, Yousefi, Froutaghe, Fakoor and Shakeri (2020), Kamenidou, Stavrianea, and Liava, (2020), Adom, Adu-Mensah and Sekyere (2020), and Prickett, Fletcher, Chapple, Doan and Smith (2020) relate to C-19 in Iran, Greece, Ghana and New Zealand respectively. These have left a research vacuum on issues concerning C-19 in Nigeria. Moreover, most of the business related C-19 studies focused on sectors and issues other than retailing of household daily needs. For example, Herdiana (2020) analysed the drivers and inhibitors in the course of implementing social distancing policy in Indonesia; Upoalkpajor and Upoalkpajor (2020) examined the impact of C-19 on Education sector in Ghana; and Kamenidou *et al.* (2020) examined Greek citizens' preventive and precautionary behaviour towards C-19. Thus, critical issues pertaining to customers' demand, firm supplies, sales, profit/loss, and bailouts/palliatives to the small-scale retailers during C-19

lockdowns have not been adequately addressed by earlier researches. Findings of the few C-19 studies (for example, Adom, *et al.*, 2020; Goeb, Boughton and Meredia, 2020; Prickett, *et al.*, 2020) that focused on the retail sector have not been verified to determine consistency of their findings or otherwise, which necessitated this study.

In view of the foregoing, the study seeks to determine whether the retailers perceived the C-19 curfew imposed by Niger State Government as effective throughout the period, and whether the C-19 curfew imposed by Niger State Government created business opportunities and/or threats to retailer in Minna metropolis. Also, to identify and evaluate business gains and/losses recorded by the retailers during C-19 lockdowns; and to examine the retailers' compliance with the C-19 protective orders during business hours. The scope of the study is micro and small scale retailers doing business in Minna districts and/or suburbs. These retail outlets are located along district streets, manned by their owners together with sales people, and usually use rented shops or kiosks. The occurrence of the events (first phase of the lockdown) is from late March to late April 2020, while the cross-sectional study was conducted in early May 2020. The literature scope is centered on retail business and C-19 pandemic. The research report is organised into five sections: introduction, literature review, methodology, analysis and results, and conclusions and recommendations.

2. Literature Review

Studies on the impact of C-19 pandemic on business and economy of nations are beginning to emerge from different continents. In Asia where the C-19 originated, Goeb *et al.* (2020) found that 90% of retailers of agricultural inputs in Myanmar experienced at least one form of disruption (inputs demand, inputs supply and loan repayment on credit lending) due to C-19 pandemic; transportation fare caused price inflation of agricultural inputs (fertilizer and maize seeds) compared to the previous year; and sales revenue from the agricultural inputs (fertilizer, maize seed and pesticide) declined by 50% compared to the previous year. The study further revealed that 80% of the agricultural retailing outlets complied with 'washing hands' safety measures, followed by over 60% of the retailers that adopted 'wearing face coverings', almost 50% of the retailers adopted 'social distancing', and over 20% retailers sanitised shop surfaces daily, among others. Another research perspective from Evangeline and Karthick (2020) showed that social dining (the culture of sharing tables with strangers in restaurants and bars) declined by 50% during C-19 pandemic in Chennai, India, while 80% of wedding ceremonies got postponed which affected hotel bookings and restaurant business. However, 94% of restaurant operators need financial bailout from the Indian government to sustain their food businesses. Hadianfar *et al.* (2020) found that private and public schools and universities' closure did not significantly reduce the number of confirmed C-19 cases; however, implementation of social distancing caused significant decrease in the number of confirmed C-19 infections in Iran. A study by the branch of Italian and French Chambers of Commerce in Hong Kong in 2020 found that 60% of retail businesses (fashion/textile, food and beverages, accessories, cosmetics/beauty, and jewelry/watches) voluntarily closed down due to C-19 pandemic, 70% of them suffers revenue decline of over 60%, and almost 80% of the companies recorded business losses. In addition, 27% of the retail companies adopted unpaid leave for their employees during C-19 season, 20% of them reduces employees' salaries, while 36% of them retrenched their

employees. Herdiana's (2020) study identified three factors militating against effective implementation of social distancing policy in Indonesia, namely government weak capacity to enforce the policy, inconsistency of governments' policies (the central government pronounced social distancing policy while the regional government opted for total lockdown policy), and apparent violation of social distancing policies by citizens living in local communities.

In Europe where C-19 first surfaced outside Asia, Prickett *et al.* (2020) found that retail and transportation workers suffered job losses as well as underemployment in New Zealand during C-19 'Alert Level-4'. Kamenidou (2020) found that Greek citizens mostly avoided non-mandatory public transport and contact with individuals with respiratory symptoms as C-19 precautionary measures; however, the least applied precautionary measures are testing for C-19, and use of face masks in public places. In Africa, Adom *et al.* (2020) reported from their study that C-19 disrupted business operations and caused poverty among retailers (petty traders, cobblers, mobile food vendors, women carriers, and electronic appliance repairs) that survive on daily hand-to-mouth incomes in Kumasi. The retailers flouted C-19 lockdown regulations due to unbearable economic hardship, and equally expended their business capital which threatens the survival of their informal micro businesses. Upoalkpajor and Upoalkpajor (2020) found that students have awareness about C-19 virus in Tamale metropolis, Ghana.

3. Methodology

This study is premised on a survey research design because the population of the study comprised small-scale retail-shop owners/operators. These retailers totaling 51 were conveniently sampled from 17 districts in Minna (Chanchaga, Shango, Sauka-Ka-Huta, Tunga, Fadikpe, Gurara, Dutsen-Kura Hausa, Dutsen-Kura Gwari, Gbakunku, Mandella, Maitunbi, Bosso Low-Cost, Bosso, Tudun Fulani, Airport Quarters, Gbeganu and Albishiri). The C-19 lockdown which restricted movement of people justifies the use of convenient non-probability sampling technique as well as limited number of 51 samples. Adom *et al.* (2020) adopted interview survey research design, and both purposive and convenient sampling techniques to select 25 retailers from the informal sector in Kumasi during C-19 lockdown. Evangeline and Karthick (2020) sampled 53 food handlers in selected restaurants in Chennai and used questionnaire and interview for data collection during C-19 study.

Days in which the curfews were relaxed were used to engage some research assistants for data collection through the use of scheduled-structured interview instrument. Structured interview is the alternative for questionnaire in an interview (Cooper and Schindler, 2011) and it is relevant in situations where the interviewees are illiterates and large in numbers. For example, findings from pilot study showed that majority of the retail outlets are manned by persons who cannot read nor write in English language. Also, data from structured interview instrument are easy to quantify and analysed descriptively (May, 1993). A combination of dichotomous, multiple choice, and scale questions were featured in the interview instrument. The research data were analysed using descriptive statistics (frequency count, relative frequency and charts). The descriptive statistics were essentially used for data analysis in the earlier similar studies by Upoalkpajor and Upoalkpajor (2020), Kamenidou *et al.* (2020), Goeb, *et al.* (2020) and Evangeline and Karthick (2020). According to Keller and Warrack (1999), the importance of descriptive statistical techniques should not be

underestimated because graphical techniques and numerical descriptive measures such as averages are used to summarise and present data to yield useful information for decision making and recommendations by company managers and government officials.

Four research hypotheses were postulated and tested using Pearson's Correlation (r). The research variables in the four hypotheses are C-19 curfew information versus C-19 curfew compliance; C-19 Curfew enforcement versus C-19 curfew compliance; awareness about dangers of C-19 versus protective measures against C-19; and reality of C-19 versus protective measures against C-19. All tests were carried out by means of Social Science Statistical Package (SPSS) at 95% confidence interval.

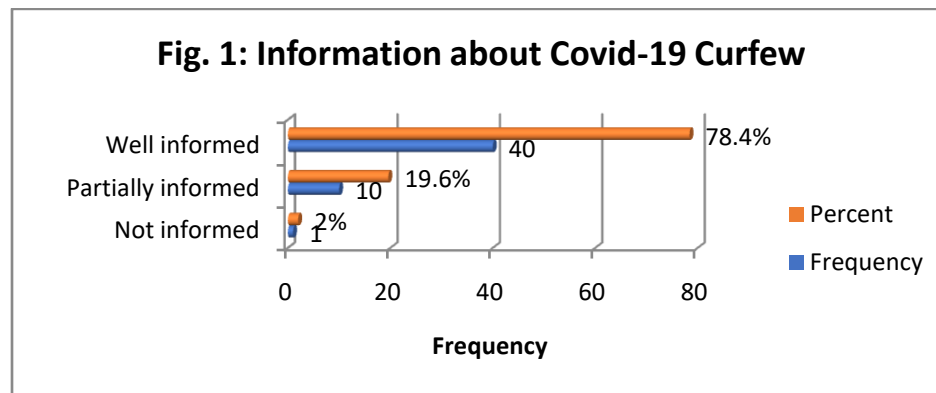
4. Results

Analysis and Interpretation

Out of 51 retailers interviewed, 40 or 78.4% respondents operate either provisions retail shops only, foodstuff shop only, or both provisions and foodstuff shop only, while the remaining 11 or 21.6% respondents are in *other types of retailing* such as GSM credit cards, cell phone accessories, electrical accessories, and medicine stores.

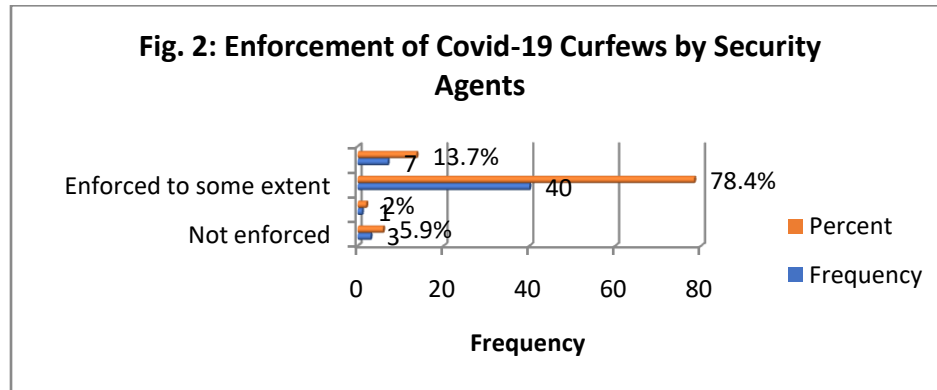
Effectiveness of Covid-19 Curfews in Minna

The first stage in fighting C-19 pandemic is to create awareness to the public. Thus, this study inquired about the retailers' awareness on C-19; data presented in Figure 1 indicates that majority of the respondents (40 or 78.4%) are *well informed* about the disease, while just 10 (19.6%) and one (2%) are *partially informed* and *not informed* respectively. This is consistent with the finding of Upoalkpajor and Upoalkpajor (2020) that students in Tamale metropolis have awareness about C-19.

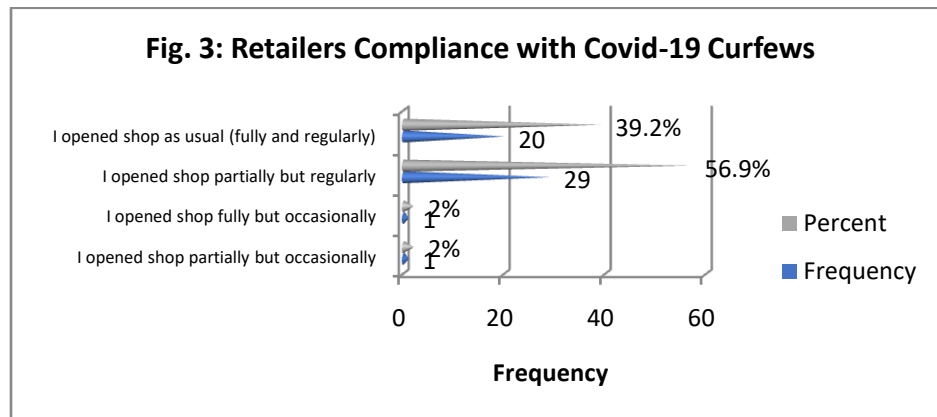


The best strategy in curtailing the spread of novel C-19 was total lockdown of the economy and ensuring everyone stays at home except health and essential workers. Thus, this study sought to know the extent of government enforcement of C-19 lockdowns in Minna metropolis; Figure 2 shows that majority of the respondents (40 or 78.4%) agreed that the curfews were '*enforced to some extent*' and 7 or 13.7% percent of the respondents agreed that the curfews were '*enforced to a large extent*'. However, only 3 (5.9%) and 1 (2%) of

the respondents agreed that the imposed curfews were ‘not enforced’ and ‘I don’t know’ respectively.



Furthermore, the study probed the retailers’ compliance with the lockdown orders in Minna metropolis. Figure 3 shows that majority of the respondents amounting to 29 (56.9%) did not comply with the orders as they ‘opened shops partially but regularly’, followed by 20 (39.2%) respondents that did not comply with the orders at all as they ‘opened shops as usual (fully and regularly)’, and respondents that ‘opened shop partially but occasionally’ and ‘fully but occasionally’ are 2 or 4% each. Cumulatively, retailers that opened shops regularly are 49 or 96%, while those that opened shops occasionally are 2 or 4%. This is consistent with the finding of Adom *et al.* (2020) where majority of the retailers flouted C-19 lockdown regulation in Kumasi, Ghana.



In terms of the correlation between retailers’ level of information about C-19 curfews and compliance with the curfews, Table 1 shows that the two variables are weakly negatively correlated ($r = -.136$) insignificantly ($P = .341; > .05$). That is, high level of information about C-19 curfew generated low level of compliance to the curfew orders. The variance (r^2

= 1.85) shows that retailers' *high level of information about C19 curfews* accounted for almost 2% declined *compliance to the imposed curfews*.

Table 1: Correlations (curfew information and curfew compliance)

		Level of Information about C19 Curfews	Retailers compliance with the curfews
Level of Information about C19 Curfews	Pearson Correlation	1	-0.136
	Sig. (2-tailed)		0.341
	N	51	51
Retailers compliance with the curfews	Pearson Correlation	-0.136	1
	Sig. (2-tailed)	0.341	
	N	51	51

Source: Field Survey, 2020

As regards correlation between perceived curfew enforcement by the government and compliance with the curfew, Table 2 shows insignificantly weak positive correlation of 10.2% ($r = .102$; $P = .478$, $> .05$) between the two variables. Impliedly, weak enforcement of curfew by government authorities led to the low compliance by the retailers. The *weak enforcement of curfew* accounted for 22.8% variation or non-compliance by the retailers ($r^2 = 22.8\%$).

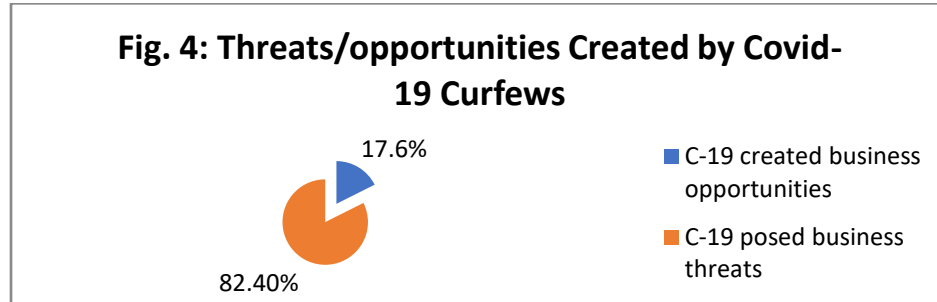
Table 2: Correlations (curfew enforcement and curfew compliance)

		Curfew enforcement by the Govt	Retailers compliance with the curfews
Curfew enforcement by the Govt	Pearson Correlation	1	.102
	Sig. (2-tailed)		.478
	N	51	51
Retailers compliance with the curfews	Pearson Correlation	.102	1
	Sig. (2-tailed)	.478	
	N	51	51

Source: Field Survey, 2020

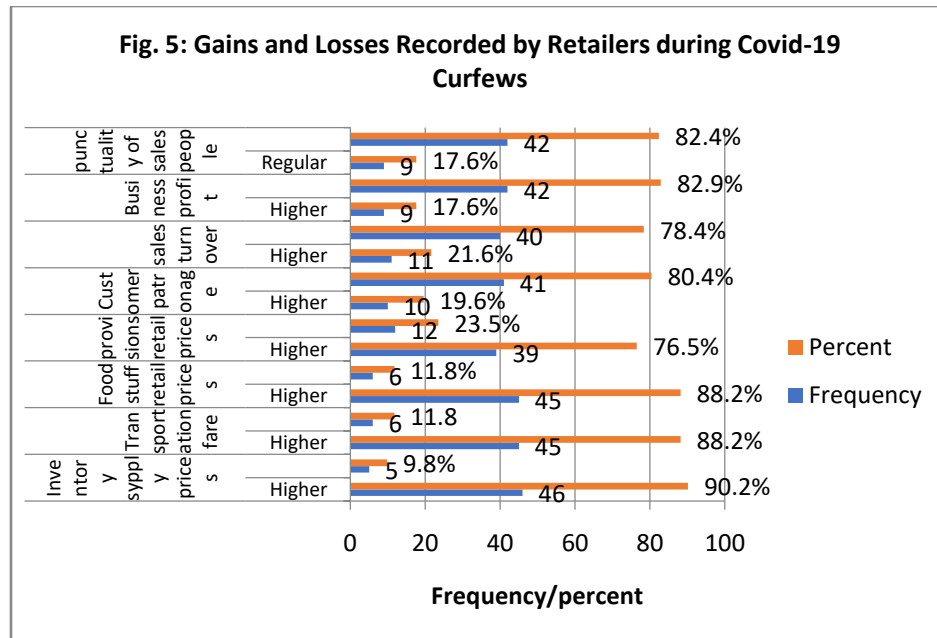
Business Opportunities and Threats

The C-19 lockdown is an unusual situation that may create either business opportunities or threats to retailers of household needs. Thus, a probe on whether the C-19 curfews created business opportunities or threats to the retail enterprises shows 82.40% response for threats and 17.6% for opportunities (see Figure 4).

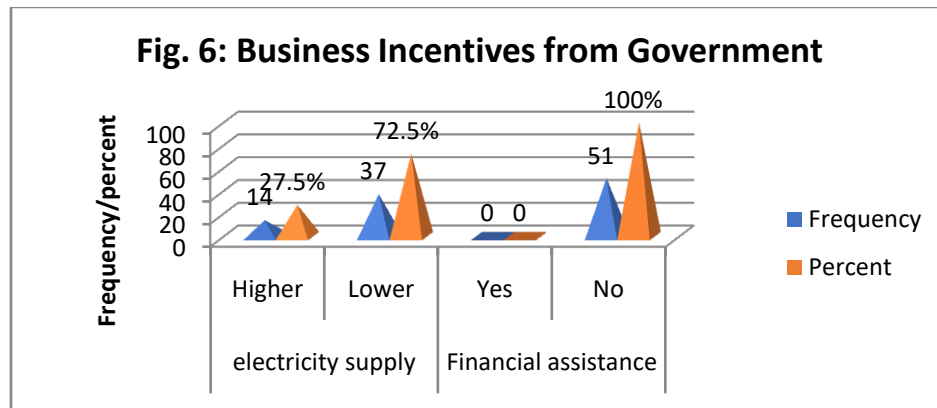


Gains and Losses Recorded by Retailers during Covid-19 Curfew

Figure 5 shows that majority of the respondents (46 or 90.2% and 45 or 88.2%) agreed that prices of supplies and transport fare respectively increased during the C-19 lockdown, which according to 45 or 88.2% and 39 or 76.5% respondents translated to inflated prices of foodstuffs and provisions respectively. Also, majority of the respondents (41 or 80.4%) agreed that customers' patronage declined during the C-19 lockdown in Minna, which according to 40 or 78.4% and 42 or 82.4% respondents translated to decline sales turnover and profit respectively. In addition, 42 or 82.4% of the respondents agreed that punctuality of sales people to work was irregular during the C-19 lockdown. These findings are almost consistent with that of Italian and French Chambers of Commerce (2020) where most of the retail companies in Hong Kong experienced revenue decline and losses.

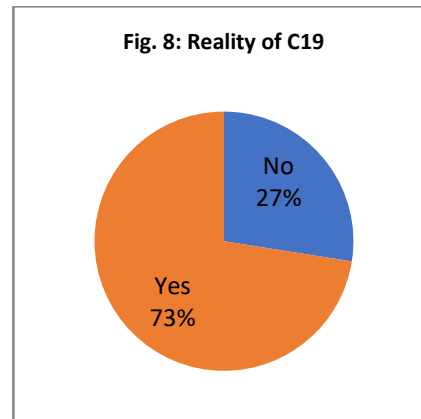
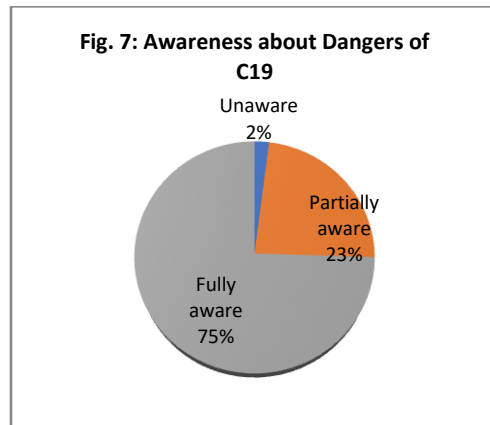


Since government projected that the private sector (small-scale retail enterprises inclusive) will suffers losses due to C-19 lockdown and may be incentivized by bailouts, the study inquired whether the retailers have received any assistance from the government. Figure 6 shows that all the respondents agreed that no financial incentives were received during the lockdown; similarly, majority of the respondents (37 or 72.5%) agreed that daily supply of electricity reduced during C-19 lockdown as against 14 or 27% respondents that supported daily increase of electricity supply in Minna.



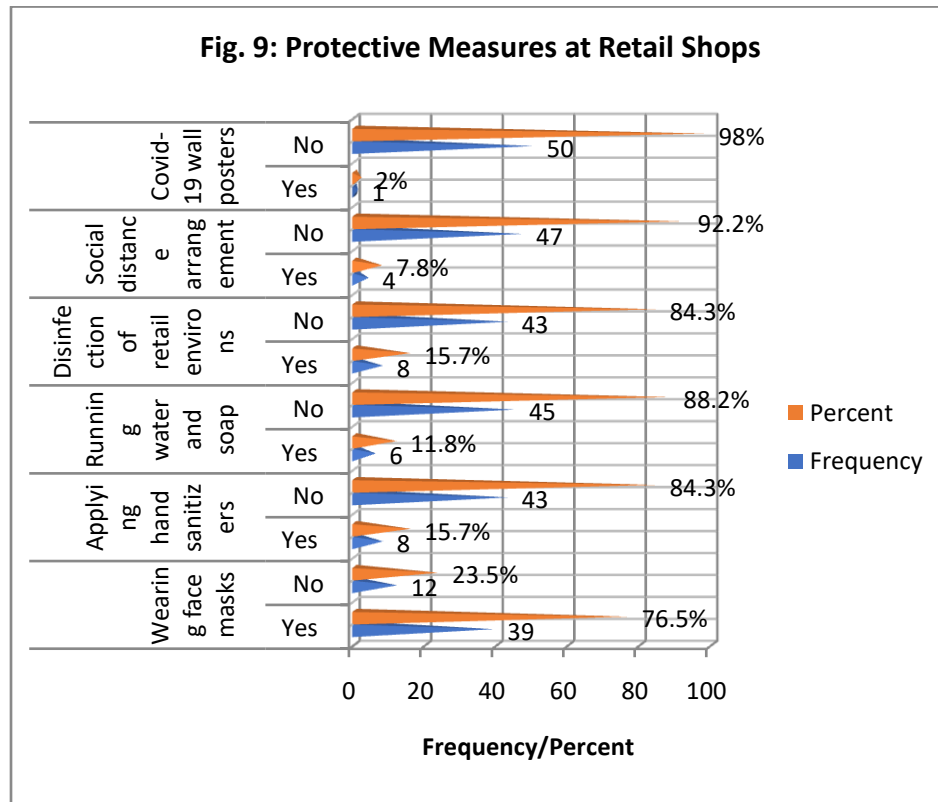
Retailers' Awareness about the Dangers of C19 and their Compliance with the Protective Instructions

Included in the public awareness programme of the government are the dangers and fatalities associated with C19 disease, hence the interrogation on the retailers' awareness about dangers of C19 and related matters. Figure 7 shows that majority of the respondents are *fully aware* of the dangers of C-19, followed by 23% respondents that are *partially aware*, and 2% respondents that are *unaware*. Cumulatively, 98% of the respondents are aware of the health risks of C-19.

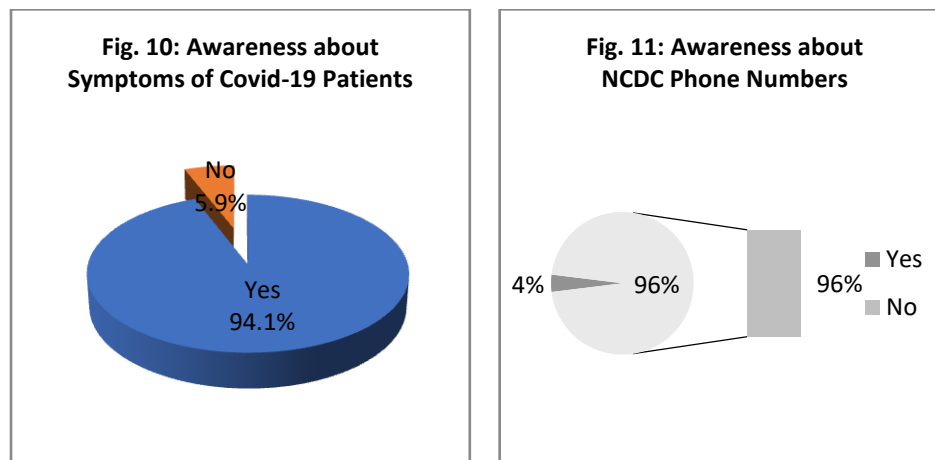


Awareness about C-19 may not necessarily translate to the belief that the virus is real. Therefore, the study questioned retailers on the reality of C-19. Result of data analysis in Figure 8 indicates that majority of the respondents believe that C-19 is real as against 27% respondents that do not.

To protect citizens from contracting C-19 disease especially when it becomes necessary to go out to re-stock basic needs during curfew relaxation hours and days, government mandated the use of protective gadgets and personal hygiene. Consequently, the study examined retailers' compliance with the government recommended C-19 protection mechanisms. Results in Figure 9 shows respondents' compliance with *wearing of facemasks* (76.5%), and non-compliance with *applying hand sanitizers* (84.3%), providing *running water and soap (washing hands regularly)* (88.2%), *daily disinfection of retail shop environs* (84.3%), *social distancing marks at the retail shop* (92.2%), and *C-19 wall posters* (98%). In Goeb *et al.* (2020)'s study, majority of agricultural input retailers also wash hands regularly and wear face masks, while majority of them failed to use hand sanitizers.



Further inquiry revealed that majority of the respondents (94.1%) are aware of the symptoms of C-19 as against 5.9% respondents that are unaware.



Similarly, 96% of the respondents are aware and handy with the phone number of National Center for Disease Control (NCDC) in Minna in case of emergencies involving any market participant. However, only 4% of the respondents do not have the contact phone number.

Result of Pearson's Correlation test presented in Table 3 shows a weak positive correlation of 8.4% ($r = .084$) between awareness of dangers of C-19 and compliance with protective measures, which is insignificant at 95% confidence interval ($P = 559; > .05$). The r^2 of 0.7% shows that respondents' awareness about dangers of C-19 is responsible for as little as less than 1% change in *respondents' compliance with protective measures*.

Table 3: Correlations (Awareness on the dangers of C-19 and Protective Measures in Retail Shops)

		Awareness about the dangers of C19	Protective Measures in Retail Shops
Awareness about the dangers of C19	Pearson Correlation	1	0.084
	Sig. (2-tailed)		0.559
	N	51	51
Protective Measures in Retail Shops	Pearson Correlation	0.084	1
	Sig. (2-tailed)	0.559	
	N	51	51

Source: Filed Survey, 2020

Table 4 shows the results of correlation test between two variables: *reality of C-19* and *protective measures*. Reality of C-19 is positively correlated with protective measures by 39.5% ($r = .395$) which is significant at 5% significant value ($p = .004; < .05$). That is, the more the retailers believe that C-19 is real, the more they adhere to protective measures against C-19.

Table 4: Correlations (Belief on the Reality of C-19 and Protective Measures in Retail Shops)

		Believe that C19 is real and fatal	Protective Measures in Retail Shops
Believe that C19 is real and fatal	Pearson Correlation	1	0.395**
	Sig. (2-tailed)		0.004
	N	51	51
Protective Measures in Retail Shops	Pearson Correlation	0.395**	1
	Sig. (2-tailed)	0.004	
	N	51	51

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Field Survey, 2020

5. Conclusion and Recommendations

In response to Corona-Virus global pandemic, Niger State government first imposed curfews in March-2020 to checkmate spread of the virus among citizens especially in workplaces, markets, schools, public transports, stadia and communities. It was foreseeable that the lockdown would affect every sector of the economy; hence, the inquiry on the retailers' compliance with the C19 curfews in Minna metropolis and the consequential effect of such decision. The study found that the surveyed small-scale retailers of daily needs are well informed about the C-19 disease, its symptoms and dangers, and the imposed curfews. However, the surveyed retailers did not comply with the C-19 curfews as they operated regularly without adequate protective measures even though the government security agents went round to enforce the curfew *to some extent*. Nonetheless, the surveyed retailers suffered decline in patronage, sales and profit and did not receive any incentives from the government as palliatives. Importantly, the study found significant positive correlation between reality of C-19 and adherence to protective measures.

Consequently, the study concludes that the retailers in Minna capitalised on weak enforcement of lockdown by government security personnel to open retail shops regularly during C-19 lockdowns without providing protective measures which endangered the lives of market participants in the retail circle (retailers, suppliers and customers) and threatens sustenance of commerce. Retailers who believe that C-19 is real are more likely to use recommended preventive and protection measures. The study, therefore, recommends that Niger State Government should ensure total enforcement of the imposed curfew by providing adequate logistics to security personnel cum monitoring the surveillance operations in order to achieve the desired objectives of forestalling rapid spread of the infectious disease and loss of lives especially in the retail sub-sector of the economy in Minna. Retailers who fail to respect lockdown orders and/or provide safety hygiene and protective arrangements in Minna should be sanctioned in accordance with the laws to serve as deterrent to other retailers. Retailers should also comply with government lockdown policy as a matter of civic responsibility; they should equally adopt all the C-19 preventive measures to protect lives of customers, suppliers and salespersons. Finally, the small-scale retailers in Minna should be incentivized by Niger State Government through tax breaks and bailout funds to cushion the effects of losses suffered due to the lockdowns.

Limitations and Future Research

Caution should be exercised in generalising this study's findings and applying its recommendations because the study is unavoidably characterized with two methodological limitations. First, the use of convenience non-probability sampling introduced sampling-bias that affects sampling and data accuracy. Second, the sample size of 51 retailers in Minna metropolis was not estimated statistically and may not be an adequate representation of the retail sub-sector. Arising from the outlined research limitations, future research with superior methodological approach is encouraged to increase the stock of research reservoir.

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Effects of Accounting Choices and Estimates on the Value Relevance Inferences

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Abstract

Accounting choices and estimates allowable within a given accounting standard lies somewhere between aggressive or conservative approach and each has short-term effect of increasing or decreasing firm's accounting earnings and book values. Thus, posing challenges to both preparers and users of accounting information. More challenging to the users and preparers is preparing financial statements using the International Financial Reporting Standards (IFRS) that focused more on fair-value measurement. Recent evidence indicates that fair-value measurements allow opportunistic behaviour due to professional judgments at the option of executives and accountants required in the measurements process. These nexus in measurements has built up a huge concern over the practices of regressing market value of equities on accounting numbers without sufficient prove on the measurements sources. This paper proposes a framework that shows how investors' reliability judgment of accounting choices and estimates influences the relationship between accounting numbers and market value of equities. Highlights of the paper has important implication of providing fresh insight to researchers, users, financial reporting agencies and preparers on the effect of accounting choices and estimates on value relevance inference.

Keywords: Accounting Choice, Estimates, Share Prices; Relevance; Reliability

JEL Classification: E64, Q56

1. Introduction

In order to maintain market equity values and to ensure fair and efficient markets, Stock Exchanges all over the world required firms to provide relevant and reliable audited financial statement (Levitt, 2000). This is to stimulate existing and potential providers of funds and other stakeholders to assess their investments, credit decisions and optimal resources allocation (IASB, 2010). Based on value relevance concept, which is empirical conceptualisation of relevance and reliability (Barth, Beaver, & Landsman, 2001), numerous studies have examined the usefulness of accounting numbers based on data sets from developed, emerging and developing markets. A consensus in the literature is that accounting amounts are relevant and reliably represent what they purport to represent. However, the inference of joint test of relevance and reliability has been criticised for not always measuring relevance and reliability as claimed in the extent literature (Holthausen &

Watts, 2001; Wyatt, 2008)¹. This is because the traditional value relevance regression does not allow researchers to judge the reliability of accounting numbers (Wyatt, 2008)². Thus, the simplistic views of the associations between market-based measures and accounting numbers could influence value relevance inference (Lee, 2001; Aboody *et al.*, 2002). Being a complex construct (Maines & Wahlen, 2006), reliability has over the years remained a major source of disagreement among practitioners and academic researchers and a significant feature preserved in most of the previous value relevance studies (Holthausen & Watts, 2001; Wyatt, 2008). This concern is more alarming in countries with weak accounting and audit practices and ineffective enforcement.

This paper share in concern expressed by Holthausen and Watts (2001) and Wyatt (2008) on the limitation of value relevance inference to capture attributes (sub-notion) of reliability such as verifiability, neutrality, material error free and representational faithfulness that add up IASB criteria for reliability. However, literature has indicated reliability qualities here refer to as accounting principle choices and estimates disclosures are associated with reliability of accounting numbers. They could serve as indirect proxies for reliability (Jonas & Blanchet, 2000; Fields *et al.*, 2001; Beest & Braam, 2013) and could influence investors' judgment of reliability. An important proposition to be addressed here is: if accounting numbers are assumed to be relevant and measure with some degree of reliability, would level of information about reliability qualities revise investor's judgments of reliability? If the answer is in the affirmative, this will be in support of the criticism that "value relevance test do not always measure relevance and reliability" as contended by Holthausen and Watts (2001), Maines and Wahlen (2006) and Wyatt (2008). Relatively few studies have attempted to investigate this possibility. In this paper, the researcher offers a proposition that disclosure of accounting choices and estimates could influence value relevance of accounting numbers.

The remainder of this paper is organised as follows. Next section presents previous studies that relate to earnings and book value with market equity values. This is followed with the discussion of reliability qualities. To link these relationships, valuation theory, market efficiency hypothesis, signaling theory and agency theory are used to demonstrate the objective of the paper.

2. Empirical Research on Value Relevance of Accounting Numbers

The term "value relevance" connotes the ability of accounting numbers to summarise the information underlying the market value of equities (share prices) or returns expressed by statistical association (Francis & Schipper, 1999). Prior studies have examined this intuition worldwide and found evidence supporting the relative and incremental value relevance of

¹ According Holthausen and Watts (2001), the value-relevance literature is based on joint test of relevance and reliability criteria of FASB statements. However, "the tests do not always measure relevance and reliability". "There is an attribute of the FASB definition of reliability that may not be reflected in the significance of the estimated relation. That attribute is verifiability; as a result significant incremental association does not necessarily imply the numbers under consideration are reliable.

² "Conclusions from value-relevance studies are not reliable if important factors are left out of the tests. We cannot tell whether investors actually used the information item of interest or whether one accounting method is optimal relative to another, or easily understand why information is value-relevant. Overall, it is difficult to directly test reliability and only a few studies do this."

book value and earnings (see Ball & Brown, 1968; Francis & Schipper, 1999; Barth et al., 2008; Habib, 2008; Alali & Foote, 2012; Barth, Landsman, Lang, & Williams, 2012; Kim, 2013). Nevertheless, series of arguments have emerged on possible bias of value relevance inference due to the variations in accounting principle choices and estimates disclosures.

The pointer of the debate is the fact that accounting measurement system revolved around the existence of alternative measurement rules for valuation of firms' resources and obligations. Measurements alternatives that fall within GAAPs, lie somewhere between a conservative to aggressive accounting choices (Skinner, 1993; Rainsbury, Bardbury, & Cahan, 2009). Either of the techniques suggests some type of bias (Jonas & Blanchet, 2000) and has short-term effect of decreasing or increasing firm's accounting earnings and book values (Skinner, 1993; Fields *et al.*, 2001; Rainsbury *et al.*, 2009). The advocacy of fair value accounting rather than historical cost based measures for assets, has long been a major debate in financial accounting theory. Some scholars are of the view that accounting methods choices and estimates valuation for loans and long-lived assets are not reliably estimable (Sloan 1999; Aboody, Barth, & Kasznik, 1999). Similarly, there are accounting estimates and choices regarding research and development cost, goodwill, inventories, corporate income taxes, financial instruments and provision for bad debt are contending issues. The potential lack of reliability of accounting choices and estimates derives from uncertainties inherent in the management discretion (Aboody *et al.*, 1999). Managers with interest consistent with investors could use their discretion to enhance informativeness of book value and earnings (Fields et al., 2001). From the perspective of opportunism, both book values and earnings may be misrepresented by exploiting the flexibility in accounting measurement alternatives to report accounting transactions that are technically within GAAP but does not reflect the true and fair economic reality of the said accounting constructs (Maine & Wahlen, 2006, Elliot et al., 2006). For instance, there is limited knowledge of how economic constructs should map into accounting constructs by preparers impaired completeness of the annual reports (Maines & Wahlen, 2006). Human bias, either intentional or unintentional may bring about material error (Maines & Wahlen, 2006). Neutrality may also be questioned if preparers use inappropriate accounting choices to achieve a predetermined outcome in order to influence investors' behaviour in a particular direction (Skinner, 1993; Fields *et al.*, 2001; Maines & Wahlen, 2006). Verifiability is violated when independent observers considered accounting methods used to depict economic construct as inappropriate (Holthausen & Watts, 2001). These events in financial reporting process could distort reported book value and earnings (Watts & Zimmerman, 1986). This is particularly true where there is weak audit process to monitor the activities of the management (DeAngelo, 1981; Rogers & Stocken, 2005; Prawitt, Smith, & Wood, 2009; Yasin & Nelson, 2012). Consequently, inference based on the product of the above practice could be biased as argued by Holthausen and Watts (2001), Maines and Wahlen (2006) and Wyatt (2008), suggesting the needs to investigate reliability qualities relative to share price-accounting numbers relation.

3. The Effects of Accounting Choices and Estimates on the Value Relevance Inferences

The fundamental criteria for deciding whether the recognition of an item will provide useful information are the criteria of relevance and reliability (IASB, 2010). Factors underlying reliability are found to influence investors' judgment of relevance of accounting numbers

(Kadous *et al.*, 2012). It is possible that the degree of the strength or weakness in the perceived reliability could significantly influence investors' valuation process (Kadous *et al.*, 2012). According to Botosan (2004) and Maines and Wahlen (2006), reliability is a complex construct and difficult to measure directly by only financial information. This is because information about the real economic construct is required to assure reliability. Nonetheless, non-financial information being increasingly used by investors to assess underlying economic phenomenon (Francis & Schipper, 1999) were found to enhance the perceived reliability of accounting information (Maines & Wahlen, 2006). In defence of Holthausen and Watts (2001), Maines and Wahlen (2006) and Wyatt (2008), many previously published papers have identified that reliability qualities have differential valuation and signaling effect (Rainsbury *et al.*, 2009; Beest & Braam, 2013). This paper discussed how this intuition influences accounting numbers-share price relation.

Market based measures could be affected by accounting choices followed by a reporting entity (Jonas & Blanchet, 2000; Elliot *et al.*, 2006; Maines & Wahlen; 2006) due to its effect on financial information quality (Rainsbury *et al.*, 2009; Beest & Braam, 2013). Consistent with Wyatt (2008), reliability may be affected by the management discretion in financial reporting process. The effect is positive if the interests of the managers are consistent with that of the investors and it is expected to increase when valid arguments are presented to provide sound bases for accounting information reliability (Maines & Wahlen; 2006; Beest & Braam, 2013). It is potentially negative if management has incentive to opportunistically used discretion usually by opting for aggressive accounting policies to boost earnings numbers and book values (Skinner, 1993). Although both conservative and aggressive accounting choices are devoid of some bias (Jonas & Blanchet, 2000), since "assets and liabilities are measured in a context of significant uncertainties, managers, investors, and accountants have generally preferred that possible errors in measurement be in the direction of understatement rather than overstatement of net income and net assets" (FASB, 2008). Thus, from investors' viewpoint, choice of accounting method could affect the magnitude and sign of coefficient of carrying book values and earnings.

In a similar manner, Petroni (2003) describes accounting estimates as either accurate or opportunistic. It is accurate if estimation errors have zero mean. An intentional, large, income-increasing estimation error implies opportunism. Considering the importance of accounting estimates, Exposure Draft, *Fair Value Measurements* issued by FASB in June 2004 underscore the need for expanding estimates disclosures to "assist financial statement users in assessing the reliability of fair value estimates reported in the primary financial statements" (Elliott *et al.*, 2006). Investors can judge the reliability of accounting estimates by observing information about the process disclosures and certain features of the estimates (Elliott *et al.*, 2006). For instance, disclosure of footnotes in a financial statement provide process information for deferred taxes, depreciation expense, inventory and other estimated measures to aid assessment of the reliability of the said accounting amounts (Elliott *et al.*, 2006). IFRS and other national GAAPs specified limit for estimating useful life for different non-current and intangible assets, provision for bad debt and other related assets and expenses that are routinely disclosed in financial statement. Deviation from what is allowable within GAAP may reflect either overstatement or understatement of book values and reported earnings (Elliott *et al.*, 2006; Rainsbury *et al.*, 2009). These notions have been

tested using experimental research designed (Elliott et al. (2006) but not in the context of long window association like value relevance study. Therefore, since the quality of estimates disclosure varies substantially between firms, evaluating how these estimates affect investors' valuation process could be a worthy exercise. This is particularly important in the reporting environment that increasingly relies on fair value measurement (AAA FASC 2005).

Thus, the potential use of manager's discretion in the fair value determination often induces information asymmetry in financial reporting process, which leads to agency costs that could threaten the reliability of fair value earnings (Song et al., 2010; Lee & Park, 2013). Nevertheless, several studies have provided good arguments that fair value hierarchy levels (Song *et al.*, 2010; Lee & Park, 2013; Lu & Mande, 2014) and level of compliance with accounting choices and estimates (Bushee & Leuz, 2005; Kang & Pang, 2005; Hodgdon, Tondkar, Harless, & Adhikari, 2008; Hassan et al., 2009) effectively mitigate the reliability concern associated with reporting of other comprehensive income and its components. Thus, assessing the effect of accounting choices and estimates³ on the value relevance of fair value earnings provides a better approach for extending the discussion of value relevance.

Thus, using fair value hierarchy levels as a proxy for reliability, Song et al. (2010) and Lu and Mande (2014) partitioned samples of the quarterly reports of firms in the United States with fair value gains and losses on financial assets and liabilities into Level 1 to Level 3⁴. In a related study, Lee and Park (2013) classified fair value gains and losses into a less subjective component (available-for-sale marketable securities) and more subjective component (fair value change on the defined benefit plan, foreign currency translation and a change in derivative instrument). Nonetheless, because some financial assets could be measured using Level 2 and perhaps Level 3, partitioning other comprehensive income items based on the perceived degree of management subjectivity does not reflect the actual sense of reporting. It is therefore essential to extend Song et al. (2010) and Lu and Mande (2014) on the effect of fair value hierarchy levels for multiple components of other comprehensive income. Siekkinen, (2016) documented an evidence on how different investor protection environment affect value relevance of fair values. Usman, Amran and Shaari (2017) provided evidence on how corporate governance influence investors valuation of fair value earnings such as other comprehensive income.

Again, compliance with accounting requirements, which reinforces concerns about the reliability of accounting information, has remained a controversial issue in many reporting environments. Perhaps, the reluctance of firms to observe full compliance suggests violations in terms of disclosure requirement of relevant standards (Hassan et al., 2009; Mısırlıoğlu, Tucker, & Yükseltürk, 2013). This could exacerbate agency costs and hence threaten the reliability of accounting information (Hassan *et al.*, 2009; Braam & Beest, 2013). Thus, omission of compliance when investigating IFRS adoption may lead

³ In the extent literature, corporate governance practices, fair value hierarchy levels and firm's compliance with accounting standards have individually been associated with the reliability of accounting earnings. Thus, in this study, these variables are labelled as reliability factors for convenience.

⁴ The value relevance of fair values based on Level 1 and Level 2 is greater than the value relevance of Level 3 fair values. Moreover, the impact of corporate governance practice is more for Level 3 measurement.

researchers to draw incorrect conclusions, especially if noncompliance is widespread (Hodgdon *et al.*, 2008; Mısırhoğlu *et al.*, 2013)⁵. The idea presented in this paper is important, given the dearth of empirical evidence linking the level of mandatory disclosures and firm value in developing economies (Bushee & Leuz, 2005; Kang & Pang, 2005; Hassan *et al.*, 2009; Tsalavoutas, 2009). With an emphasis on less developed markets, Verrecchia (2001) and Leuz and Wysocki (2008) call for future research that would investigate compliance with mandatory adoption of IFRS.

Theoretically, valuation theory provides an intuitive background for understanding the relationship between accounting numbers and equity market values given an efficient market setting (Beaver, 2002). To the extent that non-financial information such as reliability qualities discussed above represents plausible signal (reduced agency cost) and a means of assessing the reliability of accounting numbers, they are likely to influence accounting numbers and share price relation. Consequently, providing scholarly evidence on how this qualities influences investors and users behaviour will have theoretical and methodological implications in value relevance research.

4. Conclusion and Implications

Previous studies have presented rekindled arguments on the effects of accounting choices and estimates on the quality of financial statements. This paper builds on their attempts to understand the impact of reliability qualities on the relationship between accounting numbers and share prices. These types of disclosure hold promise for improving financial reporting and have several critical implications in capital market research. First, the proposed framework is about combining financial and non-financial data in value relevance research. If the model is validated, the findings may provide a more robust inference than model based on financial data alone. Second, it is believe that the approach will help to minimise the bias risk of value relevance inference of regressing share prices on accounting numbers without sufficient proves regarding accounting measurements and sources. Lastly, since this study proposed mapping accounting choices and estimates in value relevance regression, it will help to increases the investors' level of confidence on the quality of financial statements especially in an environment with weak accounting and auditing practices. Nevertheless, our inability to comprehensively discussed measures of sub-notion of reliability is the major caveat of this paper. We look forward to more research to test the impact of accounting choices and estimates on value relevance inferences.

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⁵Because companies differ in terms of electing accounting principle when re-measuring fair value of assets and liabilities, financial statement users are most likely to attach different weights to different levels of compliance (Hodgdon *et al.*, 2008).

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Determinants of Investment in the Nigerian Economy: An ARDL Approach

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Abstract

This study analysed the determinants of investment in Nigerian economy, applying the Autoregressive Distributed Lag Model to show both long run and short run relationships. The result shows that government expenditure (GEXP) is negative and significant at 1%. Statistically, this implies that a decrease in Government expenditure will reduce investment by -0.02% through capital expenditure in the economy. Exchange rate (EXHR) is negative both in the long run and short run. Although it is not significant in the long run, it is significant at 1%. Interest rate (INR) is negative and significant at 5% in the short run; however, in the long run, it is positive and significant at 1%. Inflation rate (INFR) is positive and significant at 1% in the long run which means that an increase in the general price level in the country will reduce the growth of investment in the economy by 0.02%, while it is negative by -0.04% and not significant in the short run. This could be as a result of effect of inflation which decreases the purchasing power of the consumers in the country due to a higher price of consumable goods and services. Therefore the researcher recommended that policy makers should work together with the government in formulating, evaluating and implementing new monetary policies that will have an efficient and effective impact on the Nigeria economy

Keywords: Expenditure, Inflation, Investment, ARDL, Nigeria

JEL Classification: H54, P24, R42

1. Introduction

Investment is the consignment of resources made with the hope of realising benefits which are anticipated to occur over a long period of time. It is an economic movement where an individual, group, or government purchases assets with the hope of receiving adequate risk premium (returns) overtime (Duruechi & Ojiegbe, 2015).

Investment plays a very important and positive role for progress and prosperity of any country. However, investment is one of the economic tools which countries depend or rely on to resolve issues such as poverty, unemployment and so on. In the same vein, a lot of economies rely on investment to solve different economic problems, crises and challenges. Less developed countries in African such as Nigeria are introducing several economic policies that will attract and also keep hold of private investors. This is due to the fact that investment in different sectors of the economy can rapidly transform the various economic

challenges the countries are facing. Therefore, the government should critically look into investment in different sectors of the economy so as to boost high productivity, employment level, standard of living and reduce poverty and so on (Ayeni, 2014).

The experience of East Asia countries suggested that an investment rate of between 20 and 25 percent could endanger growth rate of between 7 and 8 percent with adequate attention on such factors that may affect investment and its trends (Bage, 2003). For example, during the investment boom gross investment as a percentage of GDP was 12.33% in 2009 and later declined to (-10.62%) in 2010 due to recession (World Bank, 2010).

No doubt, many factors influence investment both internally and externally. However, other researchers have studied domestic or FDI seeing them as different entities but both are needed to work hand in hand to boost overall investment and subsequently economic growth of Nigeria. To this end this study aims at analysing the factors that determine investment in Nigeria (both foreign and domestic) with the objective of throwing more light on the factor of overall investment in economy as an important tools of achieving stable and sustainable economy growth in the economy.

Contemporary growth theory takes the view that economic growth is particularly the result of capital accumulation, it is generally accepted that more capital goods will be required if there is to be growth. However, it is based on this fact that one of the principal objectives of the Nigeria government is fostering sustained economic growth through the promotion of enabling investment environment. A balance between capital formation and factors that affect capital formation gives a sustained economic growth (Anthony, 2015).

The lack of regularity of investment in Nigeria has become a wellspring of worry to all the government who are concerned about the economic growth of the country. The low level of investment has appeared to be the major issue facing the economy. Despite different programs and policies made by various government of Nigeria at different tenure to tackle the problem, the menace still exists.

2. Literature Review

Empirical review

Khan and Khan (2001) analysed the determinant of private investment by using ARDL co-integration technique to inspect the existence of long-run equilibrium relationship as well as short-run dynamic of investment. The result showed that provision for suitable environment should be provided for market, such as protection of policy rights, enforcement of contract and voluntary exchange at market determined price.

Olusegun (2010) empirically assessed macroeconomic reforms, government size and investment behaviour in Nigeria, from his investigation he finds out that government size does not complement domestic investment and credit allocated to private sector was a major factor in stimulating domestic investment in Nigeria.

Bakare (2011) investigated the determinants of private domestic investment (PDI) in Nigeria, for the period 1986 to 2009 applying the cointegration method with error correction mechanism with the result that political crisis might have created a climate hostile to positive investment in Nigeria. Ghirmay (2001) probed the relationship between export-led and investment-led growth for about 19 underdeveloped nations. They used co-integration

test and granger causality test. The result showed that exports and investment are cointegrated with economic growth in Malaysia economy. Carkovic and Levin (2002) in Oyetoye *et al.* (2011) looked at the rationale for offering special motivations to attract FDI to the host country based on the belief that FDI produce externality in form of technology transfer and spill-over. Foreign direct investment based on economic theory and empirical fact have the likely potential to affect less developed host countries positively. Oyeranti (2003) and Ayoola (2009), factors like economic and technology conditions, financial system effective, skills, institution framework, infrastructures and economic stability in host country influence the effectiveness of FDI in improving the growth of that country.

Teddy (2015) in Osemene (2018) probed the effect of exchange volatility on private investment in Zambia, using GARCH model to examine volatility in exchange rate and johansen max likelihood for co-integration and ECM. This research revealed that volatility of the nominal exchange rate exerts significant negative impact on the flow of foreign portfolio capital inflow in Zambia. Reetika and Pani (2013) in Osemene (2018) also researched on determinant of foreign portfolio investment flow in India, with the range of 1995-2011 using ARDL. The result found out that, there is a negative significant relationship between exchange rate volatility and foreign portfolio investment. The estimation on determinants of investment in Nigeria by Duruechi and Oyiegebe (2015) used OLS model, unit root test to check for stationary with Johansen cointegration test for long relationship between the variables. They found out that there is a significant relationship between the selected macroeconomic variables and level of investment in Nigeria.

Chidoko (2015) examined on the impact of capital formation on economic growth from the year 1980-2013. He made use of linear function model in his analysis and used unit root test to check for the stationarity. The study revealed that investment positively affects economic growth in Zimbabwe. However, the result showed that all component of capital inflow has a relationship with economic growth.

Adam (2011) probed the causality and effect of corruption on the FDI inflow to Nigeria, which he analyses using OLS model with ADF test. The Johansen and cointegration test for the long run relationship between foreign investment and level of corruption showed that, there is a presence of inverse relationship between foreign capital inflow and corruption. Also relationship, between foreign direct investment and Economic growth is positively significant. Finally, the research concluded that, for Nigeria to attract a large volume of foreign direct inflow and corruption at every level of governance have to be drastically reduced and checkmated. Wafure and Nurudeen (2010), researched on determinant of FDI in Nigeria. They measured the relationship between foreign investment and its determinant. Result shows that the determinants of FDI inflow are the size of market in host countries, depreciation of exchange, political volatility, and deregulation. Oregwe and Onucha (2013) investigated the determinants of foreign direct investment in Nigeria, from the period of 2001-2010. They employed secondary data from Central Bank of Nigeria's statistical bulletin and annual report. The result showed that there is absence of direct correlation between the Nigeria Gross domestic product and the level of foreign direct investment to the country.

Theoretical framework

This analysis adopts the flexible version of acceleration principle. The theory established a link between cost of capital and investment output. The theory is based desired level of investment, which depends on the level of output and use of cost of capital, which in turn relies on the price of capital goods, the real rate of interest and depreciation rate, the flexible wording of acceleration theory base with the time lag on filling the space between the actual capital stock (kt-1) in period (t-1) and optimal capital stock (k) in period t. the period (t), hence, only a fraction (λ) of (kt) is obtained. This can be expressed mathematically as:

$$K_t - k_{t-1} = \lambda(k_t - k_{t-1}) \dots\dots\dots 1$$

Where; k_t = actual capital stock in period t, k_{t-1} = actual capital stock in period t-1, K_t = optimal capital stock in period t, and λ = a constant (proportion).

Where $K_t - k_{t-1}$ = net investment and net invt = $(I_t - R_t)$, where R_t is replacement capital in period t (depreciation). Equation 2

$$I_t - R_t = I_n = \lambda (K_t - k_{t-1}) \dots\dots\dots 2$$

Equation 2 explains that net investment in period t is the same as a fraction of the difference between the desired or optimal capital stock in period (t) and actual stock in period t-1 since, given technology, k_t equals capital output ratio (k), the output in period t.

$$I_n = \lambda (kY_t - K_{t-1}) \dots\dots\dots 3$$

gross investment (I_g) is express as

$$I_g = \lambda (kY_t - K_{t-1}) + R_t \dots\dots\dots 4$$

Equation 4 explains that gross investment is the total of net investment + depreciation and represented the generally used flexible accelerator theory.

Therefore, the fundamental theory remains the same between optimal and actual capital stock. Nevertheless, the flexible wording of the acceleration principle confirms a partial adjustment instead of instant adjustment. In addition, the flexible acceleration principle is a useful theory in discussing the deficiency of the simple acceleration principle. The flexible acceleration theory provides a sufficient explanation of investment demand.

3. Methodology

Unit root analyses

This study employs the unit root test to examine the properties of the series if it is stationary or not. In case, it is not stationary, the first difference is administered using the DF and ADF test technique.

Measurement of variables

Capital formation is a term used to describe the net capital accumulation during an accounting period for a specific country. The term refers to additions of capital goods, such as equipment, electricity, tools, and transportation assets. Investment in this context stands as a proxy variable for capital formation (World Bank, 2014). Government Expenditure is the current spending and investment by central government and local authorities on the provision of social goods and services such as health, education, roads and so on (Adeoye, 2010; World Bank, 2014). Interest rate is the rate that is usually set aside to catch up with

both short-term, medium-term fund needed by the private organisation or sector based on the credit value and percentage of the borrowers and the sole aim of financing the private sector in the country. It is measured in percentage (World Bank, 2014). Exchange rate is the rate at which a domestic currency is sold for another country, currency that is generally or globally known and accepted as means of exchange. It is measured in its natural logarithm (World Bank, 2014). Inflation is the persistence general rise in price of goods and service over a specific period of time in an economy, it influences the up and down activities of the economy either positively or negatively, that is moderate or hyper. It represents independent variable in this research work. It is measured in percentage (World Bank, 2014).

Model specification

The specification of this model is based on the theoretical framework of flexible acceleration principle. Hence, the model can be specified mathematically as follows while some of the variables that are not in percentage were logged, and those already in percentage were not logged. The mathematical model is written as:

$$CAF = F(GEXP, EXHR, INR, INF) \dots\dots\dots 5$$

Where:

CAF represents capital formation, GEXP is represented as government expenditure, EXHR represents exchange rate, INR represents interest rate and INF stands for inflation

The econometric model is specified as:

$$CAF = \beta_0 + \beta_1 GEXP + \beta_2 EXHR + \beta_3 INR + \beta_4 INF + \mu_t \dots\dots\dots 6$$

<i>AF</i>	=	The real capital formation
<i>GEXP</i>	=	the government total expenditure
<i>EXHR</i>	=	exchange rate
<i>INR</i>	=	Interest rate
<i>INF</i>	=	inflation
μ_t	=	Error term which capture other factors that are not included in the model.
β_0	=	parameter constant/ intercept
B_s	=	coefficient or parameter estimates

However, CAF is regarded as dependent variable (DV) in the model, while government expenditure, exchange rate, interest rate and inflation are the independent variables (IV). Dependent variables are those variables that are determined within the model, while the independent variables are the variables that are exogenously determined. That is, variables determined outside the model.

Estimation procedure

This research work uses econometric techniques of (Autoregressive Distributed Lag Model) to show and analyse econometric relationship of the variables involved in the determination of investment in Nigeria economy between the ranges of 1981 to 2018. The rationale of choosing the sample frame is due to availability of data due to non-probability sampling technique.

Autoregressive Distributed Lag Model (ARDL)

It is more preferable when ARDL cointegration technique deals with variables that are integrated in different order, I(0), I(1) or combination of the both. It is robust when there is a single long run relationship between the underlying variables in a small sample size. .

The ADRL model specification is expressed as;

$$\Phi(L)y_t = \varphi + \theta(L)x_t + u_t, \dots\dots\dots 7$$

$$\text{with } \Phi(L) = 1 - \Phi_1L - \dots - \Phi_pL^p, \dots\dots\dots 8$$

$$\theta(L) = \beta_0 - \beta_1L - \dots - \beta_qL^q. \dots\dots\dots 9$$

Hence, the general ARDL(p,q1,q2.....qk) model;

$$\Phi(L)y_t = \varphi + \theta_1(L)x_{1t} + \theta_2(L)x_{2t} + \theta_k(L)x_{kt} + \mu_t \dots\dots\dots 10$$

Using the lag operator L applied to each component of a vector, $Lk_y = y_{t-k}$, is convenient to define the lag polynomial $\Phi(L,p)$ and the vector polynomial $\beta(L,q)$. So far, it can be assumed that the error term u_t is a white noise process, is stationary and independent of x_t, x_{t-1}, \dots and y_t, y_{t-1}, \dots , the ARDL models can be estimated consistently by ordinary least squares.

4. Result

Table 1: Unit root test (ADF)

Variable	Constant without trend		Constant with trend	
	Level	1 st Difference	Level	1 st Difference
GCAF	-3.277789**	-4.876630***	-3.695048**	-5.388942***
GEXP	0.448611	-5.701944***	-1.679292	-5.742884***
EXHR	-2.019199**	-4.170436***	-1.991045	-4.151697**
INR	-2.492017	-5.317842***	-2.294271	-5.536296***
INFR	-2.884754*	-5.593834***	-3.962449**	-5.522986***

Note: (***)1%, (**5%) and (*10%) represent significance level respectively. T-statistics is use for testing the null hypothesis that the series has unit root. Schwarz information criteria is use to determine the lag length automatically.

Source: e- views Computation

It can be seen from Table 1 above that, all the variables passed the unit root test of ADF at 1st difference and few at Level with co integration order of 1(0) and 1(1). Therefore, the null hypothesis of non-stationary is rejected at 1st difference and the alternative hypothesis of stationary is accepted. This evidence precedes the use of data in analysing the determinants of investment in Nigerian economy.

Bound test for co integration

Bound test was conducted to check for the long run relationship among the variables analysed in the model. F-statistic value was used to test for the hypothesis. Therefore, if the value of the f-statistic is higher than 1% upper bound test, we can reject the null hypothesis and accept the alternative hypothesis.

Table 2: The result of ARDL co integration test

CointegrationBound Test	
F (GCAF, GEXP, EXHR, INR, INFR)	
Optimal lag structure	ARDL (1, 3, 4, 4, 3)
F-statistic	12.86482
Significant level	critical value {Lower bound 1(0)} critical value {upper bound 1(1)}
10%	2.2 3.09
5%	0.56 3.49
2.5%	2.88 3.87
1%	3.29 4.37

Source: e- views Computation

The value of f-statistic figures tests for null-hypothesis that, there is no co-integration among the variables used for the analysis. To describe the co-integration relationship among gross capital formation (GCAF) and its determinants, the null hypothesis of no co-integration relation was analysed by overall significance of f-test. 12.86482 is the result of F-test for co-integration test which is greater than 1% upper bound test critical value of ARDL co-integration. This means that there is long run relationship among the variables used in the analysis. The long run relationship denotes the influence of investment in an economic growth, such that, in the long run investment will influence economic growth in Nigeria under the period studied.

ARDL Long Run and Short Run Analysis Results

Table 3: Long Run Analysis

Variable	Dependent variable (GCAF)			
	Coefficient	standard error	t-statistic	(p-value)
GEXP	-0.027628	0.002215	-12.47383	(0.0000) ***
EXHR	-0.001329	0.011705	-0.113572	(0.9112)
INR	-0.594023	0.254174	-2.337076	(0.0348) **
INFR	0.202180	0.050376	40.13427	(0.0000) ***
C	49.44540	6.965688	7.098423	(0.0021) ***

Note: *, **, *** represent 10% 5% and 1% significant level respectively.

Source: e- views Computation

Determinant of investment in Nigeria economy was analysed by the long run ARDL test through its signs and p-value of the model. The long run effect and significance of the variables was shown through the coefficient and p-value of the model (Table 3).

$$EC = GCAF - (0.0276 * GEXP - 0.0013 * EXHR - 0.5940 * INR + 0.2022 * INFR + 49.4454)$$

Table 4: Short Run Analysis

Variable	Coefficient	standard error	t-statistic	(p-value)
$\Delta(GEXP)$	-0.007588	0.002098	-3.616489	(0.0028) ***
$\Delta(EXHR)$	-0.021352	0.007150	-2.986194	(0.0098) ***
$\Delta(INR)$	0.601703	0.156257	3.850739	(0.0018) ***
$\Delta(INFR)$	-0.046374	0.035753	-1.297095	(0.2156)
CoinEq (-1)*	-1.107217	0.108179	-10.23506	(0.0000) ***

Source: e- views Computation

From Tables 3 and 4, both long run and short run results shows that government expenditure (GEXP) is negative and significant at 1% (***). The long run result implies that a decrease in Government expenditure will reduce investment by -0.02% through capital expenditure in the economy. Exchange rate (EXHR) is negative both in the long run and short run results but, not significant in the long run though it is significant at 1% (***) in the short run. This implies that an increase in exchange rate will lead to a fall in investment. Interest rate (INR) is negative and fairly significant at 5% (**), which implies that an increase in interest rate will decrease investment in the country by 0.59%, while in the short run, it is positive and significant at 1% (***), which means that a decrease in interest rate will lead to an increase in investment in the economy. Inflation rate (INFR) is positive and significant at 1% (***) in the long run, which means that an increase in the general price level in the country will reduce the growth of investment in the economy by 0.02%, while it is negative by -0.04% and not significant in the short run. This could be as a result of effect of inflation which decreases the purchasing power of the consumers in the country due to a higher price of consumable goods and services. These findings are almost in line with the outcome of Agwu (2015) who investigated the determinant of investment in Nigeria, using ARDL to examine both the long run and short run coefficient of variables relationship with unit root test and bound test for co-integration. The result shows that there is a long run relationship among the variables (interest rate, size of government, capital investment) in Nigeria.

Diagnosics Tests

Diagnostic test was used to determine how strong a model is, through R^2 , adjusted R^2 , F-statistic, Durbin Watson statistic, LM serial correlation test and heteroskedasticity.

The coefficient of determinant (R^2) is a key output of regression analysis and adjusted R^2 compares the explanatory power of a regression model that contains different number of predictors and also captures the fluctuation of data. Total significance of the regressor and its p-value is check by using F-statistic. Heteroskedasticity and Durbin Watson statistic was used for checking the autocorrelation of the series. LM serial correlation test was used to check for the serial or nature of the data and how related they are. Jarque- Bera statistic is use to check for the normality distribution of the model through the p-value.

Table 5: Diagnostic Test

Diagnostic	t-statistic	(p-value)
R^2	0.874805	
Adj R^2	0.782557	
F-statistic	63.29938	(0.0000) ***
Durbin Watson	1.657198	
<i>Heteroskedasticity test:</i>		
F-statistic	0.767403	(0.7094)
Jarque-Bera	0.463946	
<i>LM serial correlation:</i>		
F-statistic	1.590506	(0.2439)

Source: e- views Computation

From table 5, the R-square which explains the variation of the dependent variable that is explained by the regressors is 87%, which implies that 87% of the model is explained by the

regressors. The adjusted R^2 explains the variation of insensitivity of data fluctuation by 78% in the diagnostic test. F-statistic is 63.29938 and significant at (1%), which explained the overall significant of the model. The result is free from autocorrelation as shown by Durbin Watson (1.65), which means that the null hypothesis is rejected. Heteroskedasticity is explain by its F-statistic, the model is free from heteroskedasticity and therefore, reject the null hypothesis of no heteroskedasticity of the disturbing noise (Error term) and accept the alternative of homoscedasticity of the error term. The Jarque-Bera test shows the normality of the model by 0.46 while the LM serial correlation test shows that there is an absence of serial correlation through its p-value of F-statistic.

Stability test

The stability test is used through cumulative sum of recursive plot to check for the stability of the model coefficient. If the plot lies within boundary of 0.05% level of significant, then estimated coefficients are said to be stable.

5. Conclusion and Recommendations

The following findings were made from the ARDL result in the long run and short run. Government expenditure: there is a negative and significant impact of government expenditure on investment in Nigeria in both short run and long run. Exchange rate: there is a negative sign in both short run and long run but insignificant in the long run and significant in the short run. Interest rate: there is negative and significant impact of interest on investment in the long run; there is a positive and significant impact of interest rate on investment in Nigeria. Inflation rate: there is a positive and significant impact of inflation on investment in Nigeria, there is a negative but insignificant impact of inflation on investment in Nigeria. The ARDL diagnostic analysis explained that the model for the estimates is in good fit to check for the strength of the model and the stability test revealed that model through cumulative sum and cumulative sum of square analysis indicate that the model is stable.

This study has examined determinants of investment in Nigeria for the period which spanned between 1981 and 2018. The study adopted econometric analysis to test the direction of economic relations between variables, and test have been carried out concerning model and other necessary tests. The study used the ARDL model to detect the integration, stability and the existence of both long run and short run (error correction model) relationship. However, investment in Nigeria has not been encouraging because government expenditure is very poor. According to this research outcome, government expenditure is negative which implies that government of the country has not been active in spending in the economy. If government spends in the country, it will increase the purchasing power of the people in the economy which will equally increase the level of investment and appreciate exchange rate in the long run., if government expenditure is effectively modified in the economy. However, increase in government expenditure could lead to inflation if not properly handle and the government expenditure might be negative, because of inappropriate use of government expenditure in the economy which is making the investment ineffective. For there to be a sustainable investment in Nigeria, there is need to reduce the level of interest rate. This is because a high level of interest rate will discourage investors in investing in the economy.

The policy thrust of this research for agencies (could be government and non-government organisation) and policy makers is that policy makers should work together with the government in formulating, evaluating and implementing new monetary policies that will have an efficient and effective impact on the Nigeria economy. Monetary authorities should promote policy that will encourage deposits and also make available loanable funds to improve and encourage investment. Government should edit or reassess its policies on investment and pay more attention to its determinants, they should invest more on resources in providing infrastructure which will raise the level of output, decline inflation, interest rate and exchange rate fluctuations, because they are indispensable or crucial ingredients for boosting investment in Nigeria.

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An Assessment of Youth Empowerment through a New Technology Innovation Adoption among Rice Farmers in Kano State, Nigeria

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Abstract

This paper examines the impact of new technology adoption among youth empowerment of rice farmers in Kano State. Primary data was collected from the rice farmers communities. Multinomial logit model and marginal effect model were used. The finding of the study shows that the higher the average yearly income, the higher the farmers' adoption of modern tools than the traditional or semi-modern tools. Findings are supported by the economic theory of adoption, which links adoption choice with the utilities the farmer derives from the technology in term of productivity and increase in income. Similarly, the higher the highest educational qualification of the rice farmer, the more (2.0%) the farmer adopts modern rice farming tools; this is in line with the a priori expectation and is statistically significant at 10% level. Farmers that possess higher educational qualification tend to adopt modern tools, perhaps because of the socialisation and information parity between them and their less-educated counterparts. The study concluded that both males and females should really be encouraged to go into rice farming, as majority of the respondents from this study are males. Doing this, will further increase the number rice farmers and consequently boost local rice output.

Keywords: Technological Innovation, Rice Farmers, Empowerment, Mlogit

JEL Classification: M54, Q16

1. Introduction

Nigeria is one of the largest rice markets in Africa, with an estimated population of over 180 million people, growing at 3.2% annually and predicted to reach 221 million by 2020 (NPC, 2006). Nigeria's rice consumption has increased quite significantly over the last decade (6 – 7% per annum). Data on rice production in Nigeria has equally shown steady increase. Nigeria produced 0.343 million metric tons of rice in 1970; 1.09 million metric tons in 1980; 2.5 million metric tons in 1990; 3.298 million metric tons in 2000; and 3.219 million metric tons in 2010. Despite the place of rice in contributing to food supply in Nigeria, its production is still put at about 3.2 million tons. This has been shown to be far below the national requirement, as over \$600 million worth of rice is imported annually into the country (Ohaka et al., 2013). Average per hectare yield of rice of Nigeria is far less than that

obtained in many other countries of the world (FAO, 2008). Rice in Nigeria is facing the same situation as the national level yield of rice is over 73% lower than the highest average obtained in other countries of the world (World Bank, 2012 as cited in Ohaka et al., 2013) like China (mainland), India, Indonesia, Bangladesh, Viet Nam, and Thailand where annual average production is 142.1, 103.8, 45.8, 34.6, 29.3 and 19.8 million metric tons respectively (AMIS, 2015).

The study mainly examines the factors that determine technology adoption by rice farmers as well as its impact on rice output in Kano State. The connection between technological change and production efficiency cannot be over-emphasized. Agricultural research effort can only be successful when developed technologies by research institutes are adopted by the end users to increase production (Udemeze, 2013). This study, therefore, seeks to give information that would help Cereals Research Institutes within and outside the state, farmers and universities to promote improved technological packages on rice production that would be relevant to the needs and problems of farmers in Kano State by identifying the factors determining technology adoption by rice farmers. This study covers the entire rice farmers in Kano State, made up of 44 local government areas out of which the study shall draw its sampling frame. Therefore, farmers that produce commodities other than rice are not considered by the study. The study covers both the irrigation and rain-fed farmers in the three main areas (Kura, Bunkure and Garun-mallam) where the crop is massively produced. The study collected and analysed data for the farming period of year 2016.

2. Literature Review

Conceptual Issues

Many scholars have made attempts to give a concise definition of what the adoption concept actually denotes. Technology comprises two components, hardware and software. The hardware consists of physical tool that embodies technology (Chi & Yamada, 2002). The software consists of information base for the tool. In Mumford's classification (1946), "technology-as-subjects" encompasses the entire range of fabricated items intended for some use or other, including tools, utensils, utilities, apparatus and machines. Mitcham (1978), technology-as-process" includes most importantly the activities we commonly denote as making and using. The key element here is that of skill defined as 'proficiency in the use of artifact', distinguished technique from technology. Technology refers to skills, regarded as capability of particular human subjects, and technology means a corpus of generalised, objective knowledge, in so far as it is capable of practical application (Chi & Yamada, 2002).

Loevinsohn *et al.*, (2013) defined technology as the means and methods of producing goods and services, including methods of organisation as well as physical technique. According to these authors, new technology is new to a particular place or group of farmers, or represents a new use of technology that is already in use within a particular place or amongst a group of farmers. Technology is the knowledge/information that permits some tasks to be accomplished more easily, some service rendered or the manufacture of a product (Loevinsohnet *al.*, 2013). Technology itself is aimed at improving a given situation or changing the status quo to a more desirable level. It assists the applicant to do work easier

than he would have in the absence of the technology hence it helps save time and labour (Bonabana-Wabbi, 2002).

Empirical literature review

Extensive review of the literature on technology adoption in developing countries, by Feder *et al.*, (1985) in Bravo-Ureta *et al.* (2005) revealed that the various factors that influence technology adoption can be distinguished into three broad categories; factors related to the characteristics of producers; factors related to the characteristics and relative performance of the technology and institutional factors. Alarima *et al.* (2011) examined factors affecting the adoption of sawah technology by rice farmers in Nigeria using regression analysis. Factors identified affecting farmers' adoption of sawah technology were attitude of farmers, attributes of sawah technology, access to contact farmers and household size influenced the adoption of sawah technology. The study showed that attributes of the technology, access to contact farmers and size of the farmers' households were found to be positively related to the adoption variable and statistically significant. Furthermore, Nasiru (2014) stated that the factors related to the characteristics of producers include educational level, experience in the activity, age, gender, level of wealth, farm size, labour availability, risk aversion, etc. He asserted that the factors related to the characteristics and performance of the technology include food and economic functions of the product, the perception of individuals of the characteristics, complexity and performance of the innovation, its availability and that of complementary inputs, the relative profitability of its adoption compared to substitute technologies, the period of recovery of investment and the susceptibility of the technology to environmental hazards. He further opined that the institutional factors include availability of credit, the availability and quality of information on the technologies, accessibility of markets for products and inputs factors, the land tenure system, and the availability of adequate infrastructure.

Also, Matata *et al.* (2001) listed factors like personal, institution, environmental and socio-economic factors as influencing technology adoption. Adesina and Baidu-Forson (1995) found that age was negatively related to probability of participating in rice development projects, though Asante *et al.* (2011) recorded a positive relationship.

Saliu *et al.* (2016) examined the socio-economic determinants of the adoption of improved rice technologies by small scale farmers in Kogi State, Nigeria, using multistage random sampling to select 120 registered rice farmers with the Kogi State Agricultural Development Project (ADP). Ordered probit regression was used to analyse the data. Result of the estimated ordered probit revealed that farm size, household size and contact with extension agents favoured the adoption of all the eight most important rice technologies which could be used as a measure towards pleasant disposition to commercial rice farming.

Oladele and Kolawole (2013) examined the ex-ante adoption of Sawah rice production technology in Kwara State Nigeria using a logit regression analysis. They found that the significant determinants of adoption of Sawah rice production technology in Kwara State to be practicability of the technology, labour requirement, extension support/training, age, education, farming experience, and gender. Other factors are knowledge of rice cultivation, returns to investment, access to credit and loans, use of family labour, availability of seeds/planting materials, cultivate rice on low land, existing farmers groups, information on

rice from input dealers, information on rice from extension officers, information on rice mobile phones and distance to market.

Theoretical framework

This study used the Theory of Reasoned Action (TRA). The theory states that an individual’s intention to adopt an innovation is influenced by his attitude towards the behaviour and subjective norm (Tooraj & Sahel 2011). A person’s behaviour is determined by their intention to perform the behaviour. The attitude towards performing the behaviour is an individual’s positive or negative belief about performing the specific behaviour. Therefore, attitudes are the beliefs a person accumulates over their lifetime. This theory also opines that the intention to perform behaviour depends upon the product of the measures of attitude and subjective norms (Hillmer, 2009). If a person perceived that the outcome of behaviour is positive, they will have a positive attitude towards performing that behaviour and vice versa (Onyeneke, 2017).

3. Methodology

Model Specification

The multinomial logit model used in this study is adopted from Nimoh *et al.* (2012), KIP (2013) Takeshima *et al.* (2013) and Justice & Seth (2014), little modifications were however made on it to suit the objective (i) of this study; Let y denotes the level of technology adoption from modern to semi-modern to traditional technologies taking on the values 1, 2, and 3 respectively and let x denote a matrix of conditioning variables (in this study the technology adoption determinants). Since the probabilities must sum to unity, $Pr(y = 0|x)$ is determined once the researcher know the probabilities for $j = 1, 2, \dots, j$.

Let x be a $1 \times K$ vector with first-element unity. The multinomial logit (MNL) model has response probabilities;

$$Pr(y_i=0|x) = e^{x'\beta_i} / \left(\sum_{k=1}^{k-1} e^{x'\beta_i} \right) \dots\dots\dots 1$$

$$Pr(y_i=j|x) = e^{x'\beta_i} / \left(\sum_{k=1}^{k-1} e^{x'\beta_i} \right) \dots\dots\dots 2$$

where β_i is $k \times 1$ vector coefficients of exogenous variables, $i = 1, 2, \dots, j$.

Let the utility of the irrigated rice farmer be represented by U . Then, the utility gained by adopting a kind of technology, T will be $U_i (T)$. If $T=0, T=1$ & $T=2$ given that three category of technology are available; farmer adopts the modern, semi-modern or traditional kind of technology.

Therefore, a farmer adopts technology 0 if:

$$U_i(0) > U_i(1) \ \& \ U_i(2) \dots\dots\dots 3$$

1 adoption takes place when

$$U_i(1) > U_i(0) \ \& \ U_i(2) \dots\dots\dots 4$$

2 adoption takes place when

$$U_i(2) > U_i(0) \ \& \ U_i(1) \dots\dots\dots 5$$

Therefore, considering that the decision to adopt depends on some factors such as farm, then;

$$U_i^*(0) = \frac{1}{\left(1 + \sum_{k=1}^{k-1} e^{x' \beta_i}\right)} = X_i \beta + \varepsilon_i \dots \dots \dots 6$$

$$U_i^*(1 \& 2) = \frac{e^{x' \beta_i}}{\left(1 + \sum_{k=1}^{k-1} e^{x' \beta_i}\right)} = X_i \beta + \varepsilon_i \dots \dots \dots 7$$

where ε_i is the error term and is assumed to be continually distributed and has symmetry around zero.

If the probability of adoption is $pr(y_i=0|x)$, then probability of non-adoption is $pr(y_i=j|x)$. Replacing the first left hand side of equations 4, 5 and 6 results in

$$pr(y_i=0|x) = \frac{1}{\left(1 + \sum_{k=1}^{k-1} e^{x' \beta_i}\right)} = X_i \beta + \varepsilon_i \dots \dots \dots 8$$

$$pr(y_i=j|x) = \frac{e^{x' \beta_i}}{\left(1 + \sum_{k=1}^{k-1} e^{x' \beta_i}\right)} = X_i \beta + \varepsilon_i \dots \dots \dots 9$$

Where $pr(y_i=0|x)$ is the conditional probability of adoption of the reference variable by farmer i conditional on the explanatory variables, and $pr(y_i=j|x)$ is the probability of adoption of the other alternative variables (1&2) by farmer i , x are the variables hypothesised to explain adoption and β is the vector of parameters to be estimated. The estimable econometric models are:

$$y_i = \frac{1}{\left(1 + \sum_{k=1}^{k-1} e^{x' \beta_i}\right)} = \beta_0 + \beta_1 PS + \beta_2 AGE + \beta_3 TECST + \beta_4 GPOL + \beta_5 AC + \beta_6 HHS + \beta_7 EDU + \beta_8 FP + \beta_9 EXP + \beta_{10} AT + \beta_{11} SOW + \varepsilon_i \dots \dots \dots 10$$

$$y_i = \frac{e^{x' \beta_i}}{\left(1 + \sum_{k=1}^{k-1} e^{x' \beta_i}\right)} = \beta_0 + \beta_1 PS + \beta_2 AGE + \beta_3 TECST + \beta_4 GPOL + \beta_5 AC + \beta_6 HHS + \beta_7 EDU + \beta_8 FP + \beta_9 EXP + \beta_{10} AT + \beta_{11} SOW + \varepsilon_i \dots \dots \dots 11$$

Where PS is the farmer's plot size, AGE is the farmer's age, TECST is the Cost of the technology, GPOL is the government policy on the technology, AC is agricultural credit, HHS is the farmer's household size, EDU is the educational qualification of the farmer, FP is the farmer's farming purpose, EXP is the farmer's year of experience in rice farming business, AT is the access to the modern technology and SOW is the source of water to farmer.

Target Population

The targeted population of this study consists of all the registered rice farmers in the three (3) rice farming areas. These farmers are spread across the three local government areas where rice is mainly cultivated. The areas consist of about 1, 200 registered rice farmers. Kura, Bunkure and Garun-mallam has 500, 400 and 300 registered rice farmers respectively

(Muhammad & Hamisu, 2014). The local governments are further made up of various communities whose main occupation is farming.

Sample Size

Kura, Bunkure and Garun-mallam have 12000 registered farmers each having 5000, 4000 and 3000 rice farmers, respectively. Therefore, the sample from the three farming groups will be used. Taro and Yamen (2003) recommended the formula below for the determination of sample size from a given population. Therefore, in this study, the sample size, n , is given by;

$$n = \frac{N}{\{1+N(e)^2\}} \dots\dots\dots 12$$

$$= \frac{12000}{\{1+12000(.05)^2\}} = \frac{12000}{\{1+12000(.0025)\}} = \frac{12000}{\{1+30\}} = \frac{12000}{\{31\}} = 387 \text{ respondents}$$

Therefore, the total sample size for the study is 387 rice farmers from the study area.

Sampling Technique

This study adopted the multistage sampling techniques as the sampling procedure is in three stages. In the first stage, the sample was divided into three major rice producing local government areas. These local government areas include Kura, Bunkure and GarunMallam. This division was in such a way that a total of one hundred (100) farmers was included in each of the local governments. The second stage involved dividing each local government into four communities since a local government contains more than four communities. Therefore, in each community, a total of twenty five farmers were drawn. The sample therefore, consists of twelve (12) communities. Finally, the selection of the twenty five (25) farmers from each of these communities was done using the random sampling technique. This procedure is an important approach because it avoids mix up of certain parameters that are important in the study (Muhammed & Hamisu, 2014).

The Study Area

Kano State is situated in the Sudan Savannah agro ecological zone of Nigeria located between latitudes 9° 30' and 12°37' North and longitudes 7° 34' to 9° 25' East. The climate of the study area is Tropical dry climate with a mono modal rainfall distribution averaging 600mm per annum with most rains occurring between May and September. Air humidity is high during the wet season and very low during the dry season. Average temperature is 29°C with minimum temperature occurring from November to February and highest temperature occurring in March and April (Olofin & Tanko, 2002). The intensive production of rice in various rice production clusters have led to processing and marketing of rice in large processing clusters which are scattered in production clusters of Kura, Karfi, Kwanar Dawaki, Tudun Wada, Bunkure, Garun Mallam and Chiromawa (COMEIN, 2007).

Method of Data Collection and Analysis

This study reported its findings from field survey, hence it made use of the cross sectional data. The data were gathered by distributing a well structured questionnaire (and if need be applying direct interview method) to the targeted respondents from the three rice producing groups; Kura, Bunkure and Garun-Mallam. These groups' selections were based on the concentration and intensity of rice farming activity as well as the resources available to the

researcher. The data collected were analysed using version 14.0 of the STATA statistical software and involved the estimation of multinomial logit (mlogit) model

4. Result

Table 1; Determinants of the Level Modern Rice Farming Technology Adoption in Kano State (Estimated co-efficient of the multinomial logit model)

Variables	Traditional Tools	Modern Tools
Sex	12.99857*** (.9838291)	-1.92061* (1.14512)
agesq	.0001826 (.0001149)	.0003746*** (.0001143)
heq	.0191809 (.0950111)	-.1036027 (.0982083)
cf	.000012 (8.37e-06)	.0000142* (8.31e-06)
lcach	-.0859691 (.2300213)	-.4410731* (.2448904)
lcirs	-.8728965 (.7120153)	-.1356291 (.558259)
lsac	-.4914238 (.3983859)	-.7260902* (.4110887)
fs	-.1923355 (.3171729)	.1403761 (.2419687)
nrf	.3988416 (.2519286)	.2419687* (.2243544)
layi	-.0872687 (.2061261)	.3208624 (.3208624)
lacimp	-.1673555 (.3160353)	-.8780411*** (.3138259)
Observations	299	299

Source: Author's computation using stata 14 statistical package

Having estimated the multinomial logit model whose estimate is presented above, it can be observed that the multinomial log-odds of adopting traditional tools of farming when all other variables are held constant, is higher by about 12.99 units when the farmer is a male rather than a female. This appears to be negative and statistically significant at 1%. This is, perhaps because the male sex is believed to be more energetic than the female and also more resisting to change than the female. This is in agreement with a priori expectation and in line with the findings of previous studies by Ebojoi *et al.* (2012) and Nasiru (2014). Furthermore, this variable is at 10% significant in terms of adopting semi-modern or modern tools of rice farming. In addition, the estimated marginal effects of this coefficient in Table 2 were found to be statistically significant at 1% level. The result shows that the probability of rice farmers adopting modern rice farming tools will decrease by 1.28% and increase that of traditional tools by about 2.8% when the household head is male. These variables are all significant at 1% levels each for both the traditional, semi-modern and modern choices.

Table 2: Determinants of the Level Modern Rice Farming Technology Adoption in Kano State (Marginal Effects)

Variables	Traditional Tools	Semi-Modern Tools	Modern Tools
	0	1	2
Sex	2.812546*** (.1970605)	-1.524004*** (.269851)	-1.288543*** (.1748942)
agesq	.0000104 (.0000211)	-.0000646*** (.000022)	.0000542*** (.000018)
heq	.011457 (.0177732)	.0085985 (.0194484)	.0200555* (.0161137)
cf	1.44e-06 (1.45e-06)	-3.17e-06* (1.76e-06)	-1.73e-06 (1.27e-06)
lcach	-.0496888 (.0431284)	-.0372663 (.0471549)	-.0869551** (.0407027)
lcirs	-.169375 (.140266)	-.1307907 (.124491)	-.0385843 (.1012974)
lsac	-.0433192 (.0750982)	.1415603** (.0731039)	-.0982411 (.0715818)
fs	-.049006 (.0571978)	.0083201 (.055881)	.0406858 (.0405961)
nrf	.0371513 (.044035)	-.1119628*** (.0465593)	.0748115** (.0352891)
layi	-.0409039 (.0396031)	-.0231795 (.0408514)	.0640835* (.0342498)
lacimp	-.0280254 (.0600204)	-.1183821** (.0612717)	-.1464075*** (.0511079)
Observations	299	299	299

Source: Author's computation using stata 14 statistical package

AGESQ variable is the square of the farmer's age, positive and statistically significant at, though, 1% on the adoption of modern tools but by insignificant units in traditional, semi-modern or modern farming tools. Thus, when the farmer's age is high, the multinomial log-odds of adopting the modern rice farming tools is higher by 0.0003 units than the younger farmers when all other variables are held constant. This is in line with our a priori expectation and conforms with findings of Oladele and Kolawole (2013), Nasiru (2014) and Asante et al. (2011). Further, the results explain that geometric increase in the age of the farmer increases the probability of adopting modern technology by a meager 0.005% and 0.001% for traditional. However, it reduces the chances of adopting semi-modern tools by an approximate 0.006%. These variables are significant at 1% each for semi-modern and modern respectively and not for traditional.

From the table above, this variable represents the highest educational qualification of the farmer and it is line with our a priori expectation, though for the traditional category but not

for the modern. The variable also shows higher mlog-odds for adopting modern farming tools when the farmer possesses a higher educational qualification by an average of -0.10 units and 0.01 units for the traditional tools. The positive, though not significant, conforms to the conclusion of previous researches like Ebojoi *et al.* (2012), Oladele & Kolawole (2013) and Nasiru (2014). In the same connection, a 2.0% probability of adopting modern rice farming tools is envisaged for a farmer who possesses a higher educational qualification. 0.8% and 1.1% are the predicted probabilities of adoption semi-modern and traditional tools of rice farming respectively, although, these variables are statistically insignificant except for the modern category at 10% level (Ebojoi *et al.* 2012; Oladele & Kolawole, 2013; Nasiru, 2014).

ICACH variable represents the natural log of cost of agro-chemicals. It is negatively related to the level of technology adoption which conforms with the a priori expectation of the variable. The variable shows higher multinomial log-odds for adopting modern farming tools when the cost of agro-chemicals is high by an average of 44.1 units and 8.5 units for the traditional tools. This is perhaps due to the fact that some farmers may be risk lovers and therefore, expect the modern agro-chemical to be relatively more efficient and effective than the traditional, thus the reason the price is higher. Furthermore, the marginal effects of the variable portrays a higher elasticity for the modern agro-chemical with 8.6% decrease in the adoption of modern tools as result of a unit increase in the cost of agro-chemicals when other variables are held constant and vice versa. This exhibits the highest as the probabilities for the traditional and semi-modern are 4.9% and 3.7 % respectively.

ICIRS based on the result of the estimated MNLM coefficients in Table 2, this coefficient was found not to be statistically significant at all levels. The result shows that on average, when other variables are held constant, the farmers' multinomial log-odds of adopting modern farming tools instead of traditional is lower by about 0.13 units when the cost of improved rice seed is high. This is because it is believed that farmers are rational and will buy inputs with lesser prices and this conforms with the a priori expectation. That is, farmers tend to adopt tools that are less-expensive than those that are more expensive and therefore the log-odds of adopting them will be far higher and therefore, tend to have higher probability of adoption. However, these co-efficient are not statistically significant when it comes to farmer's decision to adopt traditional or modern tools of rice farming respectively. In the same line, the estimated marginal effects show that the probability of adopting modern tools is approximately 3.8% while that of semi-modern is 13% and 16.9% for the traditional tools of rice farming.

ISAC based on the estimated model in Table 2 which shows the coefficients of the variable, natural log of source of agric credit was found to be statistically significant at 1% (modern) level. The result shows that the multinomial log-odd of adopting modern tools of rice farming (compared to traditional) is higher by about 0.72 units as for traditional is 0.49 units. Likewise, the result of the estimated marginal effects depicts a 5% statistical significance for semi-modern tools (only) and has the highest probability of adoption with about 14.1%, 9.8% and 4.3% responses from a unit change in the source of agric credit (agric bank or otherwise) for semi-modern, modern and traditional tools respectively. These findings conform to a priori expectation and this is because when the farmers source for fund to finance their rice farming activities, they tend to enjoy that right of complete

ownership and therefore may not bother to or even easily find modern tools than when the funds were given to them by the government (through banks or its agencies) which mostly accompany it with HYVs and other tools like fertilizers.

FS based on the estimated coefficients of the MNLM in Table 2, this variable (farm size) was found to be statistically insignificant at all levels. The results have shown that when a farm size increase by one unit (other factors held constant), the multinomial log-odd of adopting traditional instead of modern tools reduces by about 0.19 units. Likewise, the increase in the size of farm increases the multinomial log-odd of adopting modern rice farming tools by 0.14 units, all things being equal. This (later) conforms to a priori expectation, that the larger the farm size, the more the possibility of adopting modern tools in other to amass productivity. Also, from the estimated marginal effects, all but the traditional tools category appear to be positive conforming to the a priori expectation. The traditional, although negative, has the highest probability of decrease in adoption as a result of a unit increase in the farm size with about 4.9% while semi-modern has a positive probability of adoption by about 0.8% and finally the modern tools of rice farming maintains a 4.0% probability of adoption given a unit increase in the farm size.

NRF coefficient was found to be statistically significant at 10% (for modern tools only) level. The results show that a 1% increase in the number of rice farms will lead to an increase in the multinomial log-odd of adopting traditional tools by about 0.39 units all things being equal. Additionally, a 1% increase in the number of farms will cause an increase in the multinomial log-odd of adopting modern rice farming tools by about 0.24 units. This is in concord with a priori expectation, that is, as number of farms increases, farmers tend to look for ways of reducing the cost and increasing output by simply reducing number of labour in weeding, cultivation etc. This is because, the higher the number of farms, the higher the potential of the revenue generation of the farm and thus, the use of modern fertilizers, seeds, herbicides, as well as their application methods is sacrosanct, all things being equal. In the same way, the variable was, for the estimated marginal effects, statistically significant at 1% and 5% levels for semi-modern and modern tools respectively although the sign on semi-modern negates the a priori expectation. The result shows that there is a 3.7% probability of adopting the traditional tools when the number of farms increases and vice versa. In addition, an 11.1% probability of decrease in the adoption of semi-modern tools was predicted and finally, all things being equal, an increase in the number of rice farms of a farmer increases the probability of adopting modern tools by an average of 7.4% and vice versa.

LAYI coefficient was not found to be statistically significant at all levels for (traditional and modern tools) the coefficient estimates. The estimated marginal effect shows a 10% statistical significance for the modern tools and has the highest probability. The estimated coefficient results show that a 1% increase in the natural log of the average yearly income of the farmer will lead to decrease in the multinomial log-odd of adopting traditional tools by about 0.08 units all things being equal. Additionally, a 1% increase in the natural log of the average yearly income of the farmer will cause an increase in the multinomial log-odd of adopting modern tools by about 0.32 units. Also, albeit all but the modern categories in both the coefficient and marginal effects estimates conform with a priori expectations of the variable, the marginal effects estimates show that an increase in the farmer average yearly

income (in natural log) increases the probability of adopting the modern rice farming tools by about 6.4%, all things being equal. Conversely, increase in the income from farming decreases the probability of adopting traditional and semi-modern tools by about 4.0% and 2.3 % respectively. This is because, the higher the income, the higher the ability of the farmer to afford costly modern tools of rice farming so as to maximize output, all things being equal.

LACIMP is the notation for natural log of average cost of inputs in this study. From the result of the estimated model, the coefficient of this variable, for the modern category, was found to be statistically significant at 1% level (Table 3). The result has shown that a 1% increase in average cost of inputs reduces the multinomial log-odd of adopting modern tools compared to traditional tools by about 0.87 units, when all other variables are held constant. Similarly, a 1% rise in the average cost of inputs reduces the multinomial log-odd of adopting traditional tools by about 0.16 units when all things being equal. Furthermore, the estimated marginal effect of this variable shows that there is a negative significant relationship between the probability of modern tools adoption and the average cost of rice farming inputs (Table 3). A 1% rise in the average cost of rice farming inputs leads to about 14.6% increase in the probability of adopting modern tools rice farming when other factors are held constant.

Homoscedasticity and Normality Tests

Table 3: Cameron &Trivedi's decomposition of IM-test

Source	Chi ²	df	prob.
Heteroskedasticity	13.69	8	0.0903
Skewness	12.37	3	0.0062
Kurtosis	78.64	1	0.0000
Total	104.69	12	0.0000

Source: Author's computation

Table 4: Test of Multicollinearity

Variable	VIF	1/VIF
Llheq	1.01	0.991544
Sexsq	1.01	0.991763
age4	1.00	0.999773
Ayi	1.01	0.990990
Llfs	1.01	0.991672
Mean VIF	1.01	

Source: Author's computation

Slightly below table 4, which contains the result of the estimated OLS model for socio-economic determinants of modern rice farming fertilizer adoption in Kano State, Nigeria is the overall test statistic (F-value) of the model which indicates that the estimated model is statistically significant at 0.1% (p-value = 0.000). Moreover, in order to further ascertain the validity of the model, various post estimation tests were conducted although the robust standard errors were estimated.

The Heteroskedasticity and normality tests were conducted using Cameron and TrivediIm-test. The tests results are contained in Table 4 above. The result of the heteroscedasticity and

normality tests recommends that we do not reject the null hypothesis of homoscedasticity and normality. Thus, the model is normally distributed and the variances are stable across time.

Contained in table 4 above is the VIF test for measuring the extent of multicollinearity among the independent variables. Based on the result, since none of the VIF value reached a value of 10, we therefore believe that there is no problem of multicollinearity among the included variables in the model and therefore, the study maintained all the variables for the purpose of estimation.

5. Conclusion and Recommendation

The result has shown that the higher the average yearly income, the higher the farmers' adoption of modern tools than the traditional or semi-modern tools (table 1). This finding is supported by the economic theory of adoption, which links adoption choice with the utility the farmer derives from the technology in term of productivity and increase in income. Therefore this will leads to empowerment throughout the farmers communities. Similarly, the higher the highest educational qualification of the rice farmer, the more the farmer adopts modern rice farming tools (table 2). This is in line with the a priori expectation and is statistically significant at 10% level. Farmers that possess higher educational qualification tend to adopt modern tools, perhaps because of the socialisation and information parity between them are their less-educated counterparts. The result further indicated that the higher the average cost of the inputs, the lower the probability (14.6%) of adopting modern tools and this supports the theory demand in relation to adoption (or acquisition) of new tools and their respective costs

Having conducted an empirical investigation of the level of adoption of modern rice farming technology by rice farmers in Kano State, Nigeria, the following recommendations were offered based on the findings of the study. In order to discourage the use of traditional and less semi-modern tools of rice farming in Kano State, Nigeria, farmers need to upgrade their farming tools to modern technology which will improve yields. This empowers both male and female farmers in their locality. Both male and female should really be encouraged to go into rice farming, as majority of the respondents from this study have been male. Doing this, will further increase the number rice farmers and consequently boost local rice output.

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Effect of Panic Buying on Individual Savings: The Covid-19 Lockdown Experience

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Abstract

This study analysed the micro economic effect of panic buying on individual savings arising from the lockdown experienced due to the coronavirus pandemic in Niger State. The study used a total sample of 384 individuals and applied a two-stage least square regression analysis using perception, price differential and expenditure on individual savings. Finding shows that perception, price differential and expenditure negatively affects individual savings. However, only expenses on groceries and household goods tend to contribute to household expenditure in the endogenous model. The study therefore recommends authorities interplay in the market mechanism especially by maintaining a static price to avoid price fluctuation.

Keywords: Coronavirus, Expenditure, Lockdown, Panic Buying, Savings

JEL Classification:

1. Introduction

Over the last few decades, the world has experienced drastic changes especially in terms of medical advancement which have helped to reduce mortality and health scare. However, despite this advancement in medicine, new life threatening diseases sprung out and the world is often faced with the realisation that there is still a long way to go. The outbreak of the Severe Acute Respiratory Syndrome (SARS) in 2002, Ebola in west Africa in 2014, Middle East Respiratory Syndrome (MERS) in 2015 and the novel coronavirus disease (COVID-19) in 2019 has made it quite obvious that infectious diseases are still a challenge to the world (Jribi, J, 2020). One unique aftermath of the outbreak of any deadly disease is that it changes the behavioural pattern of humans socially and economically. The seriousness of the corona virus disease (COVID-19), coupled with the way it spread without any accepted treatment protocol and with the disease claiming thousands of lives, many countries have chosen to lockdown in order to curb its spread and protect its population. The essence of the lockdown was to reduce the spread of the virus and reverse the growth of the pandemic (CDC 2015). As more than half the world was put on lockdown, forcing people to stay home and only allowed to go out to meet essential needs like purchase of food stuffs and medicine, people are faced with the problem of how to fulfill their basic needs since most income generating activities have been put on hold, especially for those in the informal

sector. The fear of the pandemic, coupled with the lockdown, led to a shift in the purchasing habits of individuals and panic buying as the number of cases continued to rise without hope for a vaccine any time soon (Gayithri & Anura, 2020). This has put a lot of strain on individual income as well as savings.

Panic buying refers to the situation where individuals buy unusually large quantities of products with the anticipation of price increase as well as shortage (Kum, Xueqin, Fei & Kevin, 2020). Large amount of necessities like food and medical supplies are purchased from the market, usually resulting to stock out situations in the market. Panic buying is a socially undesirable behaviour and Gayithri and Anura (2020) attribute the panic buying during the COVID-19 pandemic to fear and apprehension which compels individuals to make hasten decisions in their purchases. In the United States for example, between February and March, 2020, household spending increased by about 50% due to panic buying but as the virus spread, there was fall in the spending (Baker, R *et.al.*, 2020). According to Kate (2020), in the UK the coronavirus pandemic has triggered a huge rise in the demand for savings plans due to the fall in the household spending during the lockdown by a third. The rise in savings in the UK stems from a combination of the decreasing household spending and financial fear, making people whose income survived the coronavirus to be eager than ever to save their money. The early days of the pandemic was characterised by increase in household spending due to panic buying which caused a strain in the income and savings of individuals. However, as the lockdown continued, household spending decreased.

After recording its first case of COVID-19 in 27th February, 2020, Nigeria was awakened to a new social and economic reality. The current living conditions of most Nigerians which are characterized with low access to sanitation and the lack of savings to facilitate self-isolation has put Nigerians at a higher risk of contracting the coronavirus. The events following the lockdown initiated in Nigeria on the 6th of April 2020 due to the pandemic clearly shows that most Nigerians do not have emergency savings (Uche, 2020). As the lockdown order sprang panic buying of food items and drugs to stock up, it became obvious that millions of Nigerians lack the resources required to survive such a drastic measure. Although the lockdown did not affect those providing essential services like food distributors and retailers, panic buying ensued for fear of higher cost (Human Rights Watch, 2020).

Prior to the outbreak of the pandemic, millions of individuals had little or no savings for emergency which can be traced to the fact that they lacked the necessary resources to afford their basic needs. According to Martinet *et al.* (2020), with no government benefits coupled with job loss, most individuals deplete their savings to smooth consumptions and in cases where government benefits were much, savings increased; just as the case of the UK. The lockdown due to COVID-19 has forced individuals to use their precautionary savings especially in countries like Nigeria where there is a very weak social protection system. The outcome of the stoppage of the income generating activities of people engaged in nonessential services arising from the lockdown is the rise in the prices of food, driven by panic buying.

In order to counteract the impact of the pandemic and lockdown on the income and livelihood of individuals, the governments of the different countries of the world have

passed several relief bills. In the US, the federal policy makers passed four major relief bills including \$2trillion Cares Act (Michael et.al 2020). The federal government of Nigeria has also undertaken steps to cushion the effects of the lockdown on the most vulnerable. These include distribution of food rations, cash transfer of ₦20,000 per month, the Central Bank of Nigeria ₦50 billion targeted credit facility towards households, micro, small and medium enterprises affected by COVID-19. In other countries like China, salaries were being paid to workers who were unable to work either as a result of illness or quarantine. Sick leaves were made available to workers in Ireland, Singapore and South Korea while in the UK, in addition to sick pay being paid to those diagnosed with coronavirus or self-isolating, a three-month payment holiday was provided to those struggling with mortgage or rental payments (Tobiloba, 2020). All these relief palliatives and care packages are critical for the sustainability of the well beings of families and also cushion the economic and social cost of the virus.

Savings has always been used as a tool to minimize and manage the weight of expenditure on individual income. However, this only works for individuals who earn income above their basic needs and for a vast majority of Nigerians, this concept is not feasible (Thelma, 2020). This is so because vast majority of Nigerians who are micro/small business/daily earners, savings/investments is a luxury. The fear of governments and economists over the world is not just on the survival of people during the pandemic but concerns are being raised on how individuals are to survive post pandemic. The impact of the lockdown hit the individuals on two periods: during the crisis period where some individuals experienced decline in income and used precautionary savings to maintain consumption and the recovery period when individuals saved to replenish their dwindling savings to the pre-pandemic level (Martinet.al, 2020). When the pandemic began and individual engaged in panic buying to survive the lockdown, a large amount of individuals' income went into meeting those needs and in most cases, those savings. The fear now became what will happen to households post crises period? Would people's perception of savings change after the pandemic? What is the magnitude of the impact of the lockdown on the savings of individuals especially those whose income were affected by the pandemic?

Since the pandemic started, a lot of research as well as inquiries have been undertaken on the health, social, economic impact of the coronavirus pandemic on individuals and the general economy. In March, 2020, Martinet.al carried out a research on the socio-economic impact of Covid-19 on household consumption and poverty. Jribi et.al (2020) also conducted a study on the impact of Covid-19 on household food wastage. As a new area of study, most researches are focused on the health impact as well as the macroeconomic effect of the lockdown on countries. However, this study focuses on analysing the micro economic effect of panic buying on individual savings arising from the lockdown experienced due to the coronavirus pandemic.

2. Literature Review

The coronavirus pandemic has had different economic impact on both the micro and macro level. The impact of COVID-19 on each nation individually has had a manifold impact on the global economy at large (Amit and Richard, 2020). The studies conducted by Baker et.al (2020), Crawford et.al (2020) and Martinet.al (2020) were focused on the impact of the corona virus pandemic on household consumption/spending. However, some studies like

Paolo and Andrea (2020), Anant (2020) and Kartseva and Kuznetsova (2020) focused their research on the macro economic impact of the coronavirus pandemic. The study by Jribi et.al (2020), unlike others was focused solely on the determination of the impact of the COVID-19 lockdown on Tunisian consumer awareness, attitudes and behaviours related to food wastage. As a lot of studies were focused on the economic consequences of the pandemic, Gayithri and Anura (2020) and Kum Fai et.al (2020) analysed the psychological and behavioural causes of panic buying following the pandemic. Both studies suggest that panic buying is influenced by individual perception, fear and a coping behaviour used to relieve the anxiety individuals had about the pandemic.

Karpman et.al (2020) explained that the response of any government to the economic consequences of the pandemic is crucial for the sustenance of the health and wellbeing of families as major sectors of the economy are closed. Such response undertaken by any government is necessary to maintain the support of the public on the stay at home order which is essential to the much needed recovery. This response from the government arose from the fact that even before the pandemic and the stay-at-home order was issued, millions of families all over the world had little or no savings for emergency and struggled to meet up with their basic needs. Governments are paying a lot of attention on a wide range of policy interventions meant to mitigate the economic and social costs of the pandemic. Most discussions on panic buying are recent and driven by the recent outbreak of COVID-19 pandemic, however, the discussions are based on different opinions by academics, medical personnel's and reporters (Yuen et.al, 2020) and as a result, focused their study on reviewing, identifying and synthesizing the causes of panic buying.

Baker et.al (2020) examined how household consumption responds to pandemic, using transaction-level household financial data to analyse the impact of the coronavirus. While exploring heterogeneous data across demographics and income, the results reveal that initially, spending increased (the result of panic buying) especially in retail, food and credit card spending but was followed by a sharp decline in household spending as the pandemic progressed. Crawford *et al.* (2020) opined that during the pandemic, if households spend much of their budget on essentials, they have less opportunity to adjust to a lower income by spending without incurring hardship and hence this is likely to run down its savings. Evaluating the socio-economic impact of COVID-19 on individuals, Martinet.al (2020) developed a micro-economic model to estimate the direct impact of the lockdown on household income, consumption, savings and poverty. The study concluded that the lockdown led to a significant drop in household savings and consumption in San Francisco Bay Area and the average recovery period for individuals is a year.

In Russia, Kartseva and Kuznetsova (2020) estimated the impact of the pandemic on the Russian labour market and household income. The outcome of the study demonstrates that the pandemic significantly affected the Russian labour market. The study shows that workers are made vulnerable in the labour market as they are being faced with the risk of dismissal and are also vulnerable to income reduction as a result of the pandemic. This situation is similar in labour market all over the world, as due to the lockdown imposed by workers all over the world are made vulnerable to potential job loss, where they do not receive social benefits and are made to rely on their savings and assistance from social protection. In India, Anant (2020) concludes that given the Indian population, coupled with

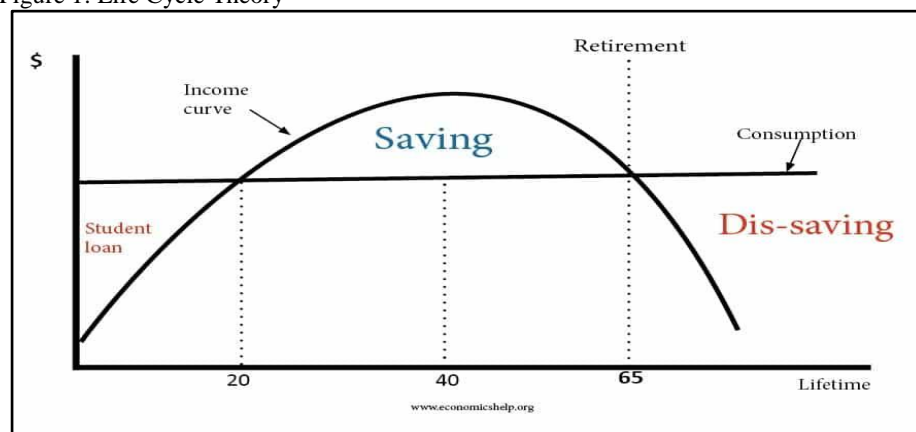
the unstable situation of the economy in the pre-pandemic period, the lockdown would be highly disruptive. The response of policy makers therefore was on how to minimize the overall impact of the shock of the lock down on the individuals.

The lockdown due to the coronavirus pandemic has revealed the vulnerability of Nigerians due to the absence of national social welfare program that could offer assistance to individuals and families in need such as food stamps, unemployment compensation, disaster relief and educational assistance (Peterson, 2020). The literature have revealed that as the governments initiated lockdown in their countries, restricting the economic activities, individuals sprang into panic and started stocking their houses with food and basic supply. This act however put a lot of strains on their income and savings.

Theoretical Framework

There are lots of theories on consumption and savings because they are both very important variables which have prompted different research over the years. This study adopts the life cycle theory of consumption, which was developed by Frank Modigliani and Alberto Ando in 1957. The theory postulates that individual/household consumption does not depend on current income but on the income expected to be earned over their life time. It explains that individuals tailor their consumption pattern based on what they expect to earn over their life time (Angus, 2005). The theory opines that consumption and savings decision of individuals reflects an attempt of distributing consumption over the individual's life cycle, which is restrained by income earned over their life span. In this theory, consumption is solely determined by perceived income to be earned over the years. Consumption is said to be held stable in the early years of individual life to allow for savings which is to be used in the future years. It is further explained in the graph below

Figure 1: Life Cycle Theory



Source: Pettinger (2019)

From the graph above, the savings done by individuals in their working years is equal to their dissaving in their earlier years and at retirement. The curve shows the pattern of the income earned by the individual with consumption slightly increasing over the years. The

graph demonstrates that as the individual earns income during his working years, he maintains consumption at a level lower than income which allows for savings which is to be used at retirement when income falls below consumption.

As the world was faced by the COVID-19 pandemic which necessitated the lock down in countries, people went into panic mode and increased their expenditure to buy food and other basic necessities they would need to survive the lock down order. However, as panic buying led to increase in expenditure of households, income decreased drastically as most income generating activities were put on hold by the lockdown and as a result, individuals had no other choice than to use some or all of their savings to purchase basic necessities. Based on the life cycle hypothesis, people save in their youth to cater for their needs at retirement; however, as a result of the lockdown necessitated by the COVID-19 pandemic, which led to panic buying, the savings of individuals meant for retirement have been greatly depleted. This shows the deficiency of the life cycle hypothesis since it does not account for unforeseen circumstances like pandemic that could potentially disrupt the hypothesis.

3. Methodology

Despite the continuous spread of Corona virus, the rate of panic buying cannot be under estimated as some states are still considering returning back to lockdown. By implication, the micro economic effect of panic buying on individual savings will still persist any time soon, due to anticipation of Covid-19 second wave. In analysing the microeconomic effect of panic buying, this study used cross sectional data obtained from Minna metropolitan area (see Baker *e .al.*, 2020; Jribi *et al.*, 2020; Gayithri & Anura, 2020; Yuen *et al.*, 2020). The data were obtained from household heads that are the sole heads of the families' saddled with the responsibilities of daily upkeep on consumption. The study used availability sampling techniques due movement control order and recent culture of social distancing, to sample 384 household heads using Saunders et al (2007) from a total population of 29,459 household heads in Minna, given the average family size on 6 persons living in household (see Samuel, Samson & Joel, 2018). Minna metropolitan was chosen due to its compliance to total lockdown, with a series of extension, as Niger State was among the first set of states to enforce lockdown with a minimal corona virus cases. The variables emphasized on this study include amount of saving used up in purchases of goods and services in a month as dependent variable, perception on increase and decrease in prices with binary outcome, price differential measured by changes in prices, expenditure is measured by cost on groceries, utilities, household goods, transport services as independent variables. Other household characteristics include age measured by number of years, gender with binary outcome of one male and zero otherwise, family size measured by number of dependants under a household, education based on number of years schooling and occupation measured by binary with one for skilled and zero otherwise (Jribi, *et al.*, 2020; Yuen, et al., 2020; Baker, et al., 2020; Crawford, et al., 2020; Kartseva & Kuznetsova, 2020).

The amount of saving can be estimated given the regression model below:

$$SV_i = \beta_1 + \beta_2 PC_i + \beta_3 PD_i + \beta_4 EP_i + \beta_5 AG_i + \beta_6 GN_i + \beta_7 FZ_i + \beta_8 ED_i + \beta_9 Oc_i + \mu \dots \dots \dots 1$$

Where SV is the amount of saving used, PC is signifies perception, PD denotes price differential, EP stands for expenditure, AG and GN are household age and gender

respectively. Also, FZ refers to family size, ED indicates educational, OC represents occupation, with i and μ referring to individual observation and error term respectively. Expenditure in this case is associated with panic buying as it consists of many items within the household reach. In order to avoid measurement error in the expenditure variable as its component consists of other variables, and as well to stay clear of endogeneity problem, the two stages least square (2SLS) was emphasized. The models are written as

$$\text{Stage I: } EP_i = \alpha_0 + \alpha_1 GR_i + \alpha_2 UT_i + \alpha_3 HG_i + \alpha_4 TS_i + \mu \dots \dots \dots 2$$

Where expenditure (EP) is a function of groceries (GR), utilities (UT), household goods (HG), and transport services (TS) in the first stage, while the second is expressed as:

$$\text{Stage II: } SV_i = \gamma_1 + \gamma_2 EP_i + \gamma_3 X_i + \mu \dots \dots \dots 3$$

Where X denotes other explanatory variables

4. Results

The result consist of both descriptive and inferential statistics

Table 1: Descriptive Statistics

Variable	mean	Standard deviation	skewness	Kurtosis
Saving	34.90	22.72	0.93	2.83
Perception	0.71	0.45	0.87	1.76
Price differential	1.73	0.57	0.16	2.95
Expenditure	26.93	1.64	-0.09	1.78
Age	35.31	11.38	0.71	3.09
Gender	0.58	0.49	-0.33	1.11
Family size	3.73	3.02	1.20	3.67
Education	2.03	1.08	0.81	3.13
Occupation	0.54	0.49	-0.16	1.02
Groceries	53.90	15.00	0.29	2.83
Utility	38.19	10.94	0.54	2.90
Household goods	35.08	10.59	0.65	4.27
Transport Service	38.19	10.80	0.50	2.81

Source: Author computation

The result in Table 1 shows the mean of the saving rate to be 34.90 with a standard deviation of 22.72 which indicates individuals with a certain level of saving despite its low. Larger individuals believed that changes in price affects the nature of purchase which either increases or decreases. These changes lead to price differential as the mean indicates 1.79, whereas the average expenditure rate is 26.93 and a difference of 1.64. Other characteristics include an average age of 35.31 with majority of them being male and having an average family of 4. They mostly have acquired a basic education and are mostly skilled workers. This enables them to buy some classes of goods for their upkeep. However, the data distribution is accurate with Skewness and Kurtosis values within the acceptable range.

Table 2: Regression Result

Variable	Saving	Saving	Expenditure	2SLS
Perception	-5.0020** (2.4891)	-5.4281** (2.4516)		-4.4745 (2.7948)
Price differential	-3.3670* (1.9711)	-3.4291* (1.9401)		-3.5267* (1.9780)
Expenditure	-3.0568*** (0.6908)	-2.1296*** (0.7592)		0.6220 (3.7200)
Age		-0.1314 (0.0978)		-0.1467 (0.1016)
Gender		-3.6678 (2.2575)		-3.9444* (2.3257)
Family size		-1.5896*** (0.4833)		2.3563** (1.1269)
Education		3.0345*** (1.1197)		2.7850** (1.1860)
Occupation		4.1998 (2.8052)		6.8643 (4.5344)
Groceries			0.0103* (0.0055)	0.0103* (0.0055)
Utility			-0.0112 (0.0076)	-0.0112 (0.0076)
Household goods			0.0248*** (0.0078)	0.0248*** (0.0078)
Transport Service			-0.0072 (0.0077)	-0.0072 (0.0077)
N	384	384	384	384

Notes: Robust standard errors are in parentheses, P values: significance *10%; **5%; ***1%

Source: Author computation

The regression result in Table 2 shows perception to be negative and significant, indicating that an increase or decrease due to panic buying negatively affects individual savings. This implies that if individual's perception on the rise in the prices of goods which sprung panic buying due to the lockdown increases, savings decreases as it will be used up to purchase such goods. Under this situation, individual tends to purchase goods at the expense of time. Price differential and expenditure on goods are negative and significant with 3.4 and 2.1 effects on amount saved respectively. This signifies that price changes during the period of lockdown led to people buying more of items than expected. It further shows that the variation in prices experienced during the COVID-19 lockdown affect individual savings inversely. Family size is equally negative and significant, which indicates that an increase in family decreases amount of savings. Increase in family leads to depletion of savings as more resources are used up to cater for the addition to the family, since most sources of income have been impaired due to the lockdown. During the Covid-19, people with larger families have their savings to be more used up than the way it used to be. The coefficient for

education is positive and significant; this indicates that the respondents are highly enlightened based on the advantages on savings. In fact, most of them have made it a culture for precaution against any unforeseen circumstance, which is now useful during the lockdown period.

Table 3: Regression Result with Perception as defined Group

	Dependent Variable: Saving Rates		Dependent Variable: Expenditure	
	Perception = 1	Perception = 0	Perception = 1	Perception = 0
Price differential	0.6433208 (4.440185)	-0.1750667 (5.556409)		
Expenditure	-3.591218 (2.367907)	-3.973084 (3.573051)		
Age	-0.1838215 (.12478)	-0.0714705 (0.1782789)		
Gender	-5.014845* (2.633303)	-1.287933 (4.747373)		
Family size	-2.377805* (1.276226)	-2.128813 (1.923176)		
Education	2.447374* (1.304882)	4.080672* (2.390565)		
Occupation	9.427474 (6.260752)	0.5098227 (5.814044)		
Groceries			0.0158** (0.0071)	-0.0001 (0.0086)
Utility			-0.0045 (0.0095)	-0.0203 (0.0126)
Household goods			0.0212** (0.0097)	0.0255* (0.0134)
Transport Service			-0.0083 (0.0096)	-0.0085 (0.0128)
N	269	115	269	115

Notes: Robust standard errors are in parentheses, P values: significance *10%; **5%; ***1%

Source: Author computation

However for the endogenous model, the dependent variable was expenditure with a set of regressors. Expenses on groceries and household goods were positive and significant, which suggest that household spending on those items were paramount during the lockdown than any other expenses. The panic buying by households were concentrated on necessity goods than luxury goods as they are most needed for surviving the lockdown. The expenditure on utility and transport service were negative and not significant because total lockdown has rendered the service provider impossible as their operations are concerned. The result for the 2SLS shows price differential and gender to be negative and significant. What is surprising is the family size result as it indicates a positive and significant result, in this case as the family size increases, the tendency of increasing their savings is higher. But education still

remains positive and significant, likewise expenditure on groceries and household goods were still positive.

The result in Table 3 shows a group difference on household perception on price fluctuations. For those that perceived increase in price due to lockdown have gender and family size to be negative and significant, with a probability of being male to be $^*-5.01$ and a decrease in savings by 2.37; whereas education is positive and significant. This indicates that those who perceived increase in price spend more of their savings during the lockdown when there is an increase to the family size. In the case of those that presumed no changes in price only found education to be positive and significant. Looking at the endogenous expenditure model, groceries and household goods were positive and significant, which shows that they are the items that influenced expenditure for those that perceived changes in prices. But those with the belief of no changes in price have only household goods to only influence their expenditure.

5. Conclusion and Recommendation

In analysing the micro economic effect of panic buying on individual savings due to lockdown experienced during the coronavirus pandemic, the result shows that the component of panic buying notably perception of price fluctuation, price differential and expenditure do negatively affect the individual saving rate. Also, groceries and household goods do account for most of the expenses during the lockdown given the endogenous expenditure model. The study therefore recommends a standard measure of maintaining a static price to avoid price fluctuation. Price differential that warrant panic buying through supply shortage should be addressed by the authorities by embarking on mobile and community sales of essential commodities, so as to forestall movement. In addition, individuals should increase their level of savings so as not to be hit hard by any future circumstances that may have negative impact on income as is the case with the COVID-19 pandemic.

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Analysis of Exchange Rate and Export Performance in Nigeria

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Abstract

The study investigated exchange rate and its impact on export performance in Nigeria. Using secondary data spanning from 1986 – 2018, the study adopted the Error Correction Mechanism (ECM) and employed export as the dependent variable while foreign exchange rate, inflation rate, interest rate, gross capital formation as independent variables. The unit root test to ascertain the stationarity level of variables and the Johansen Cointegration test to check for long run relationship between variables were employed. Findings from the result showed that exchange rate had a significant and negative relationship with export performance in Nigeria both in the short and long run. The study therefore, recommends that exchange rate should be closely monitor and managed given the implications of its movements on exports. Also, government should propose and implement policies that will stabilise the exchange rate as this will help in the reduction of undesirable impact of exchange rate fluctuations on export performance.

Keywords: Exchange Rate; Export; Unit Root Test; ECM

JEL Classification: C5, F10, F31

1. Introduction

With the dawn of globalisation, cross border trade has become a predominant feature such that countries now live interdependently leading to a continuous increase in consumption choices of people due to the demand and supply of varieties of goods and services from different countries available to them. As a result, exports have become an important source of growth and development. Export, the movement of a country's locally produced goods and services both tangible and intangible is of vital importance to every nation due to its contribution to the economy, thus countries are interested in raising export. Government encourages exports as it is seen as an avenue for higher wages, increased job opportunities, improved standard of living and increase in a country's foreign exchange reserves which can be used to manage her currency value and liquidity thereby controlling inflation and other economic challenges. Also, apart from influencing the number of foreign exchange reserves as well as the level of import affordable by a country, it enhances societal prosperity, improves industrial productivity and output and aid in employment generation (Lages and Montgomery, 2004).

It is thus clear that export is a function of international trade such that countries are linked through international trade and foreign exchange activities. International trade is essential and necessary due to differences in production elements in different countries and the variation in production factors that lead to fluctuations in prices of goods and services which determines the level of export performance of countries. Most developing countries have subsequently embraced to a high degree the economic liberalisation movement and started competing in the international markets. This to some extent was triggered by the success stories of some countries who achieved a high level of industrialization and economic growth hinged on export-growth. Today Nigeria has become relatively linked and integrated with the global economic system through her external sector with the aims of improving globalisation and export (Ajudua & Okonkwo, 2014).

Exchange rate, the value of a country's currency in relation to another is an asset price and an important exogenous variable that determines the movement of other variables all centered on macroeconomic stability and resource flow in and out of a country (Emerenini & Ajudua, 2014). The importance of exchange rate cannot be overemphasized as it plays a key role in international trade by allowing for the comparison of prices of goods and services produced in different countries. Hence, while government are interested in its stability, household and firms are also keen on its stability as they use exchange rates in businesses and personal transaction by converting foreign price into domestic currency. This has led to a continuous clamour for a functional policy framework and management of exchange rate which will aid in the ease and efficient generation of revenue, enhanced expenditure inflow and outflow with regards assets, goods and services etc. without of this, a country run the risk of a balance of trade or payment problems (Emerenini & Ajudua, 2014).

In Nigeria, foreign exchange was brought about by several factors which among others include a structural shift in production, changing pattern of international trade, institutional changes in the economy etc (Emerenini & Ajudua, 2014). A continuous variation in the exchange rate since 1960 had pervasive effects on the Nigerian economy and thus led to macroeconomic reforms with the monetary authorities trying out series of exchange rate strategies. These strategies were geared towards ensuring a reliable and sustainable exchange rate such that it will impact on economic performance through savings, lending rate and inflation (Obi, Oniore & Nnadi, 2016).

The extent to which these exchange rate policies reforms have been effective in promoting export has remained unclear. Also, there has been no real agreement on the effects of exchange rate on the trade volume. While it has been posited by some findings that there exist a negative relationship between exchange rate and trade (Pozo, 1992; Chowdhury, 1993; Fountas & Aristotelous, 1999), others such as Doyle (2001), Bredin, Fountas and Murphy (2003), Kasman and Kasman (2005) posited a positive relationship between exchange rate and trade volume. With exchange rate a key factor in export and the export-led growth theory positing that an increase in export can be a stimulating catalyst for economic growth through the creation of employment, increased profit, improved productivity and rise in reserve accumulation, the study therefore, seeks to examine exchange rate and its relationship to export performance in Nigeria.

2. Literature Review

Exchange Rate Trend in Nigeria

In the pursuit of internal and external economic stability, Nigeria has in general operated several intervention exchange rate strategies which have been summarised into two major exchange rate policies. A fixed exchange rate involving the management and fixing of the exchange rate by the monetary authority was employed between 1970 -1986. The exchange rate level was put to be in uniform with the IMF per value system and was pegged to the British Pound Sterling (Emerenini & Ajudua, 2014). With the collapse of the IMF system in 1972, the Naira was pinned to currencies of the country's major trading partners with the aim being to protect and maintain the external reserves value and achieve a stable exchange rate (Emerenini & Ajudua, 2014). The nation had a high domestic productive capacity making her a huge exporter of primary commodities. This is attributed to the rationale behind a robust Naira/Dollar exchange rate relationship between 1970 to the early 1980s as seen by the graphical movement in Figure I below. During this period, there was an exchange control regulation, induced overvaluation of the naira which led to distortions in the economy (Obadan, 2006).

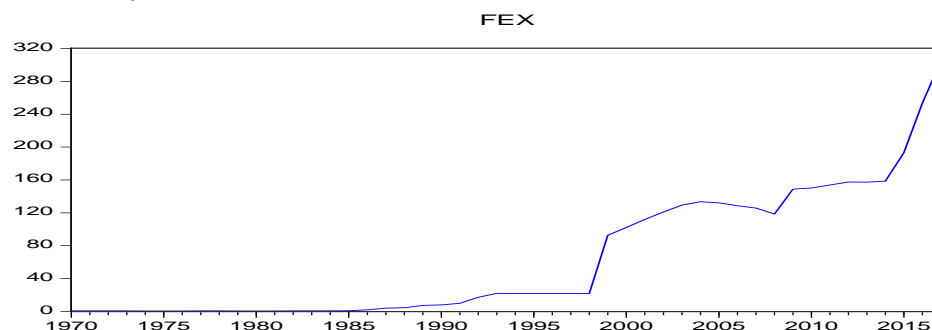


Figure 1: Annual Average Official Exchange Rate 1970-2017 (Naira/Dollar)

The Nigerian economy in the early 1980s suffered a financial depression. This was attributed to low direct investment occasioned by the lengthened use of direct controls, misallocation of resources, the fall in the world oil price, the upsurge in the demand for foreign exchange and the lack of a suitable mechanism for foreign exchange allocation. There was a fall in export and the country became import-dependent. After a series of budget deficit in Nigeria due to the global financial crisis of the early 1980s that led to huge government borrowing primarily to hold on to the fixed exchange rate of Naira/Dollar, there was the clamour by analysts to devalue the Naira through the deregulation of the Nigerian.

An economic restructuring policy was subsequently introduced in 1986 which was centred on the reliance of the market forces. The financial sector was reformed so as to mobilize capital needed for improved competition, investment and attain financial stability necessary for sustainable economic growth. A market-determined exchange rate whereby the market forces of demand for and supply of exchange rate hinged on the institutional framework of the Second-Tier Foreign Exchange Market (SFEM) was established (CBN, 2006). The objective of the SFEM was centred on the achievement of a realistic market exchange rate,

efficient resource allocation, enhanced government revenue, promotion of the exportation of non-oil products, enhancement of foreign exchange inflows and addressing and curtailing of outflow and ultimately improvement in the BOP position (Obadan, 2006).

With the introduction of the SFEM, the Naira was depreciated. The depreciation of Naira was envisaged would lead to a rise in the sourcing of raw materials, improve and increase manufacturing output while discouraging demand for import through the efficient allocation of resources (Nnanna, 2002; Adamgbe, 2006; Bakare, 2014;). However, despite the adoption of a market-driven exchange rate, there was a visible increase in demand for imports which led to a high dollar demand. This subsequently weakened the Naira. This was also not helped by the visible primary stage of production in the economy. The primary productive stage means that there is no value addition in chain of production such that the country has remained a producer of primary products (raw materials) which are exported at a cheap price and finished products imported at a higher cost. This accrues as deficits to the economy and becomes a burden on the value of the Naira (Sharehu, 2015).

From 1986, the Dollar kept appreciating against the Naira gradually at a steady rate up until 1994 when it became steady for about five years (CBN, 2006). The domestic currency had a sharp fall in value relative to the value of the Dollar in 1999. This was attributable to the political situation in the country where there was a transition from a military regime to a civilian regime. Between 2000 and 2017, there was instability in the exchange rate of the Naira as can be seen in figure I. There was a steady decline in the value of the Naira. However, the rising prices of crude oil led to surplus earning and basically provided the cushioning effect for the Naira to reverse the appreciation of Dollar against Naira. The adjustment in the demand for Dollar coupled with the quantitative easing policy pursued by the American economy made the Dollar regain more impetus against the Naira leading to an appreciation of the Dollar against the Naira (Sharehu, 2015).

Theoretical Underpinnings

The Purchasing Power Parity (PPP) Theory developed by Gustav Cassel is based on the law of one price and posits that the exchange rate between two nations rest on the purchasing power of their respective currencies (Krugman & Obstfeld 2009). What this entails is that identical goods must have one price. That is two currencies are in equilibrium when a basket of good is the same price in both countries, taking into account the exchange rates. This is subject to the absence of trade barriers, duties, etc., in such market. The theory is thus centred on the adjustments needed to be made in the exchange rates of two currencies to make them at par with the purchasing power of each other. The theory holds that in the long run, Q is constant, determined by real economic activity. Q may fluctuate in the short run; these fluctuations will be corrected in the long run. The nominal exchange rate therefore has a long run relationship to relative national price levels through the constant real equilibrium exchange rate (Mukhtar & Iliyasu, 2018).

The export-led growth hypothesis is a theory which sees export as the propelling factor for economic growth. It posits that increase in export is a major determinant of economic growth and holds that the growth of an economy is not dependent on the level of labour and capital within the economy alone, but also by the ability of the economy to expand exports (Medina-Smith, 2001). Over the years, economies have employed the export led growth

path and relied on exports as a major accelerator of economic growth considerable success recorded. In the 1950s and 1960s, developing countries held on to the notion of industrial bases being established by substituting domestic manufactured goods for imports. However, from the mid 1960s, the focus shifted as it became clear that the path to industrialization can be achieved through exports. This can be attributed to the impressive economic growth as seen in several countries in Asia including South Korea, Taiwan, Hong Kong, Malaysia, Thailand, China and India with these economies achieving economic growth at more than 10 percent annually (Krugman & Obstfeld, 2009; Bosupeng, 2015). These progresses and study from the World Bank (1987) has shown that export promotion strategy may benefit Less Developing Countries in their pursuit of economic growth (Bosupeng, 2015). This is held on the accrued possible positive externalities arising from exporting goods with comparative advantage that will arise from participation in world markets thereby speeding up an economy industrialization process (Medina-Smith, 2001). Furthermore, scholars have posited the role of government policies in promoting export including open trade policy, high trade ratios; policies favouring particular industries necessary for the production of exportable goods as key to perceived growth from export.

However, Bosupeng (2015) posited that there can be cases of a reverse relationship between exports and economic growth. While exports of goods and services by an economy are injections into the flow of income which lead to a rise in aggregate demand and an expansion of output, subsequently raising per capita incomes, it may lead to over-dependence on trade partners such that any economic shocks will have an impact on both economies. Export-led growth hypothesis implies opening domestic markets to foreign competition. Thus a floating exchange rate mechanism is usually employed to facilitate exports, increase employment and overall economic development in an economy. However, this is seen as not workable in developing economies that are deficient in real, globally competitive export base (Gibson and War, 1992). Furthermore, scholars have argued whether economic growth is driven by exports or that economic growth has led to improved export performance. This has echoed the growth-driven exports hypothesis which postulates economic growth as an influence of trade flows. With growth comes sectoral comparative advantage which will drive specialization and expedite production of export commodities in an economy (Konya, 2006).

Empirical Review

Vohra (2001) studied economic growth in India, Philippines, Pakistan, Malaysia, and Thailand, focusing on the part export performance in these countries play. He concluded and reported that export was a key component affecting economic growth of a country undergoing a stage of economic development. Employing Vector Error Correction Model, Hasanov and Samadova (2010) studied real exchange rate and its impact on non-oil exports in Azerbaijan. They concluded that appreciated real exchange rate is a major factor hindering non-oil export growth. Callabero and Corbo (1989) examined real exchange rate uncertainty on exports for Chile, Colombia, Peru, Philippines, Thailand and Turkey. They concluded that the uncertainty surrounding real exchange rate negated on the economy and has led to the reduction of exports in the short-run. The reduction was significantly magnified in the long-run. Hwang and Lee (2005), in their study concluded that there was

no significant link between exchange rate volatility and export performance during the period under study.

Investigating the relationship between exchange rate volatility and export performance in South Africa, Wilson and Choga (2015) employed a GARCH approach and concluded based on the variables employed that a negative relationship exists between exchange rate volatility and exports. Focusing on Nigeria and Ghana economy, Jonathan and Ugochukwu (2016) examined the implications of exchange rate variations on economic performance of countries in West Africa Monetary Zone (WAMZ) between 1980 and 2013. The study concluded that exchange rate volatility had an effect on growth which was significant and negative. Investigating the causal relationship between exchange rate and export growth in Nigeria, Aro-Gordon (2017) revealed in his study that a long-run equilibrium relationship does not exist between exchange rate and export as they exhibited no cointegration properties during the period of study. He thus concluded that devaluing the currency will not lead to increase in export in Nigeria. The relationship between exchange rate volatility on non-oil exports in Nigeria was queried by Akinlo and Adejumo (2014). Based on their investigation, they concluded that there exist a positive impact and significant long run relationship between exchange rate volatility and non-oil exports; however, the impact was not significant in the short run. Adaramola (2016) employed the use of econometric techniques to investigate real exchange rate volatility on the quantity of export in Nigeria. He concluded that exchange rate was volatile and its uncertainty had significant and positive impact on the quantity of trade in the Nigerian economy. Investigating the effects of price and exchange rate fluctuations on Agricultural exports in Nigeria with focus on cocoa, Ettah Akpan and Etim (2010) reported from findings in their study that exchange rate fluctuations had a positive and significant effect on cocoa exportation in Nigeria.

3. Methodology

The study adopted an econometric approach; precisely the ordinary least square regression method (OLS) so as to understand and ascertain the existing relationship between export performance and selected economic variables in Nigeria. Secondary time series data covering the period 1985 - 2018 were employed in the study and was sourced from the annual Central Bank of Nigeria (CBN) Statistical Bulletin, United Nation Conference on Trade and Development database and World Investment Reports (various issues). In line with theoretical framework, the basic model with the inclusion of other control variables is stated thus

$$EXP = f(FEX, INF, INT, GCF) \dots\dots\dots(1)$$

In line with the linear assumption of the variables, the model is specified econometrically thus:

$$EXP = \beta_0 + \beta_1 FEX + \beta_2 INF + \beta_3 INT + \beta_4 GCF + \mu \dots\dots\dots(2)$$

In a bid not to run into a case of heteroskedasticity, the scale of employed variables will be compress and equalize. This is done by transforming the variables into a linear form and stated symbolically as below

$$\ln EXP = \beta_0 + \beta_1 FEX + \beta_2 INF + \beta_3 INT + \beta_4 \ln GCF + \mu \dots\dots\dots(3)$$

Where

LnEXP	=	Natural Logarithm of Export
FEX	=	Foreign Exchange Rate
INF	=	Inflation Rate
INT	=	Interest Rate
LnGCF	=	Natural Logarithm of Gross Capital Formation
μ	=	Error term
β_0	=	Intercept
$\beta_1 - \beta_4$	=	Parameters to be estimated.

Equation 3 above is the long run model of a linear relationship between the dependent variable and independent variables. In the model, Export is the dependent variable, while Foreign Exchange Rate, Inflation Rate, Interest Rate and Gross Capital Formation serve as the independent variables. Furthermore, the study adopted the Augmented Dickey Fuller unit root test to ascertain the characteristics of the variables employed in the study. This is important so as to avoid the case of spurious data in the estimated coefficients thereby eliminating the possibility of autocorrelation in the error term. Furthermore, the Johansen Cointegration test was conducted so as to ascertain the existence of long run relationship amongst variables employed in the study. While the variables were cointegrated and exhibited a long run relationship, it was observed that these variables were not stationary at level, thus there arose the need a short run model. The preference of the Error Correction Model (ECM) stems from the fact that all included variables became linearly integrated at first difference, and they are equally cointegrated, implying that the long-run and short-run model of the study are relevant and meaningful since all short run drift will eventually converge to long run equilibrium.

4. Results

Preliminary Test

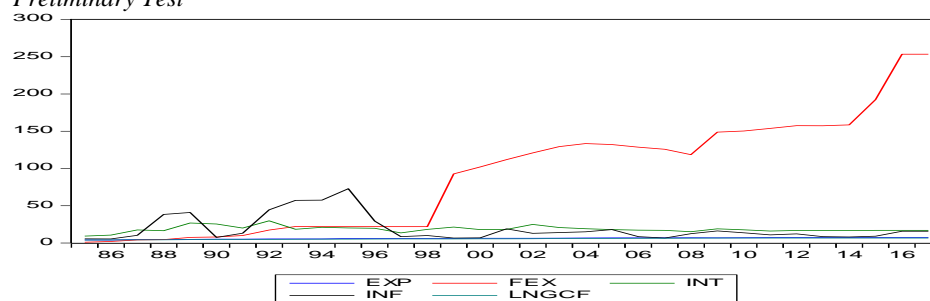


Figure 2: Graphical Trend Illustration of all Variables

Source: Author's Computation (2020)

Figure 2 illustrates the graphical structure of the variables employed in the study. The variables are well behaved and could converge in the long run notwithstanding the existence of unit root at level, except for foreign exchange rate that is a bit volatile. It can be further explained that all the included variables except foreign exchange rate demonstrated a long run convergence trend.

Long Run Estimation

The result in Table 1 below is the long run estimation showing the linear relationship between export as the dependent variable and the independent variables. This result is valid if a long run relationship exists between the variables employed in the model.

The ordinary least square result in Table 1 shows a significant negative constant implying that the model is robust and key variables that influences export in Nigeria was well captured. The key independent variable exchange rate appeared with the expected sign and is insignificant. The implication of this is that exchange rate depreciation has no robust effect on export in Nigeria. The size of the coefficient is -0.123288, implying that an increase in exchange rate by one percent will lead to 0.123288 percent decrease in export in Nigeria. Interest rate does not conform to expectation as it is not rightly signed. Also, it is not statistically significant.

Table 1: The Ordinary Least Square Regression Result

Variable	Dependent Variable: LNEXP			
	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.636107	0.361601	-2.159143	0.0491
FEX	-0.123288	0.000819	-2.351651	0.0476
INT	0.011440	0.007924	1.443701	0.1595
INF	-0.000581	0.001996	0.290943	0.7732
LNGCF	1.173019	0.072538	16.17110	0.0000
R-squared	0.865967	Mean dependent var		6.146163
Adjusted R-squared	0.842652	S.D. dependent var		1.010834
S.E. of regression	0.167164	Akaike info criterion		-0.604629
Sum squared resid	0.810371	Schwarz criterion		-0.580164
Log likelihood	15.27870	Hannan-Quinn criter.		-0.528080
F-statistic	9.144168	Durbin-Watson stat		1.770179
Prob(F-statistic)	0.003411			

Source: Authors' Computation

Inflation rate (INF) is negatively signed but not statistically significant. This means that higher inflation should be avoided as higher inflation makes domestic goods more expensive since inflation will have a direct hit on input costs such as materials and labour. These costs can subsequently have an effect on the competitiveness of exports of the economy since outputs from the economy becomes costlier in the global market. Gross domestic investment as an independent variable is rightly signed and statistically significant. From the result, one percent increase in gross domestic investment will lead to 1.173019 cent increase in export in Nigeria.

The R Square (R^2) which determines the goodness of fit of the model is 87%. This means that 87% variation in export in Nigeria is explained by all included independent variables while the remaining 13% are explained by other variables not captured in the model. Also, the adjusted R-square which measures the fitness of the model with the inclusion of other missing variables is 0.84. This implies that 84% variation in export would still be explained

by the exogenous variables. Also the general fit of the model measured using the F-statistics and its probability value shows that the entire model is robust and statistically significant at 5% level of significance. This means that the model used in the study is reliable at 95% level of confidence. There is the absence of serial autocorrelation in the model as shown by the value of the Durbin Watson statistics. This means that the model has no case of spuriousity as the dependent variable has no relationship with the error term of the model. As such any inferences made with regards the model is reliable and justifiable. In furtherance, we next test the model to check for cases of stationarity among variables employed in the model and possibly subject the variables to a cointegration test if the variables have cases of stationarity.

Unit Root Test

Table 2: Summary of Augmented Dickey Fuller (ADF) Unit Root Test Results

Variables	Level				First Difference			
	ADF Test Statistic	5% Critical Value	Prob	Status	ADF Test Statistic	5% Critical Value	Prob	Status
LnEXP	-2.2042	-2.9571	0.2087	I(0)	-6.2960	-2.9604	0.0000	I(1)*
FEX	0.6811	-2.9571	0.9898	I(0)	-4.8585	-2.9604	0.0005	I(1)*
INT	-2.1603	-2.9571	0.7022	I(0)	-3.4865	-2.9810	0.0167	I(1)*
INF	-1.9503	-2.9810	0.3055	I(0)	-3.5467	-2.9762	0.0143	I(1)*
LnGCF	2.7585	-2.9571	0.0756	I(0)	-4.6821	-2.9604	0.0007	I(1)*

Source: Authors' Computation

The ADF stationarity tests at both levels and first differencing for all the variables employed in the study is summarised in the table above. The study included constant, intercept and trend term in these tests. The optimal lag length of each variable is chosen, using the Schwarz information criteria (SIC). From the table, none of the variable was stationary at level (I(0)). However, all variables became stationary after the first differencing (I(1)) as indicated by the values of the ADF Test Statistic when compared with that of the 5% critical value. The study further carried out a co-integration test, using the Johansen cointegration technique. This result is shown below.

Cointegration Test

Table 3: Johansen Cointegration: Test Unrestricted Cointegration Rank Test (Trace)

Hypothesised No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.683689	83.55772	69.81889	0.0027
At most 1 *	0.533020	49.87578	47.85613	0.0498
At most 2	0.328679	24.27022	29.79707	0.1893
At most 3	0.281431	11.91647	15.49471	0.1610
At most 4	0.052482	1.671185	3.841466	0.1961

Note: Trace test indicates 2 cointegrating eqn(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values

Source: Authors' Computation

Table 4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.683689	35.68194	33.87687	0.0301
At most 1*	0.533020	30.60556	27.58434	0.0491
At most 2	0.328679	12.35375	21.13162	0.5131
At most 3	0.281431	10.24528	14.26460	0.1963
At most 4	0.052482	1.671185	3.841466	0.1961

Note: Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values

Source: Authors' Computation

From the result in Table 3, we reject the null hypothesis of no cointegration because at 5% level of significance, the trace test revealed two cointegrating equations among the variables employed with their Max-Eigen Statistic value greater than the 0.05 Critical Value. Furthermore, the result from Table 4, supports the long run relationship between the dependent and independent variables employed as the maximum eigen value showed two cointegrating equations at 5% level. With all variables in the model achieving stationarity after first difference(I(1)), then the error correction mechanism (ECM) is a possibility and it equally indicates that the long run static OLS is not spurious and meaningful since the short run dynamic model will at the end adjust to long run equilibrium after overcoming the short run drift. The Parsimonious ECM result is thus presented below

Error Correction Mechanism

The ECM result above is the short run model. The result has put into consideration the structural instability of individual variables and the adjustment process to long run equilibrium since they are linearly integrated. The result reveals that foreign exchange rate (FEX) has adverse effect on export level, and it is rightly signed; just as it was in the long run model. Also, interest rate, inflation rate and gross capital investment all appear with the expected sign. These depict real life situation of indirect/direct relationship. The higher the foreign exchange rate, interest rate and inflation rate, the lower the export level; also, the higher the rate of investment, the higher the export level.

Statistically, the R-squared shows that 65% variation in export level (EXP) is accounted for by the independent variables in the model with the remaining 35% explained by variables not captured in the model. Also, the adjusted R-squared is 0.56. This implies that about 56% variation in export is explained by other variables influencing export level were put into consideration. The F-statistics which shows the robustness of the general model is significant at 5 per cent level of significance. The Durbin Watson statistics tends towards 2 showing that there is no case of autocorrelation or serial correlation in the model. The ECM(-1) is negative and significant. The speed of adjustment indicates a 31% annual adjustment from the short-run equilibrium to the long-run equilibrium at five per cent level of significance. Going by this, it is estimated that it will take roughly three years to correct all disequilibrium (errors/deviations) and return the economy back to equilibrium.

Table 5: The Parsimonious Error Correction Model

Dependent Variable: LNEXP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.409910	1.185271	6.251658	0.0000
D(LNEXP(-1))	-0.679792	0.961945	-0.706685	0.4883
D(FEX(-1))	-0.006402	0.009209	0.695174	0.4954
D(FEX(-2))	-0.000281	0.010332	-0.027192	0.9786
D(INT(-1))	-0.077800	0.043540	-1.786875	0.0899
D(INT(-2))	-0.060440	0.045051	-1.341612	0.1955
D(INF(-1))	-0.011633	0.010086	-1.153397	0.2631
D(INF(-2))	0.006294	0.011576	0.543712	0.5930
D(LNGCF(-1))	0.381149	1.956305	0.705999	0.4888
D(LNGCF(-2))	0.723908	1.813525	3.919596	0.0388
ECM(-1)	-0.314757	1.153820	3.306801	0.0481
R-squared	0.650706	Mean dependent var		6.309723
Adjusted R-squared	0.561604	S.D. dependent var		0.829433
S.E. of regression	0.759462	Akaike info criterion		2.564162
Sum squared resid	10.95887	Schwarz criterion		3.077934
Log likelihood	-27.46243	Hannan-Quinn criter.		2.728522
F-statistic	9.558985	Durbin-Watson stat		1.784301
Prob(F-statistic)	0.044245			

Source: Authors' Computation

Stability Test

Figure 3 shows the CUSUM stability test for the model employed in the study showing the CUSUM plot. From the graph, the plots did not cross the 5 percent critical lines as shown by the two bound lines. The implication is that during the period of study, the employed parameters had no case of any structural instability. Therefore, it can be concluded that the estimated parameters for the study are stable over the period of study and are useful for policy decision.

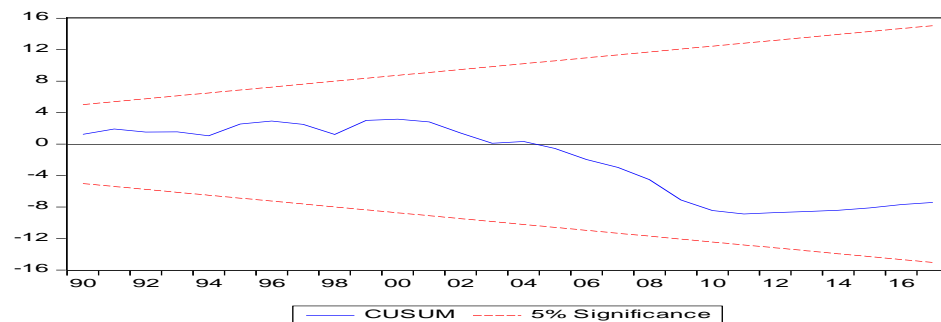


Figure 3: CUSUM Test of Stability

Ramsey Linearity Test

The Ramsey Reset Test is employed to test for linear relationship between the dependent and independent variables in a model. If the t and f statistic is significant at 5% level of significance, the null hypothesis is rejected. The test is presented below

Table 6: Ramsey Linearity Test

	Value	Df	Probability
t-statistic	0.579315	28	0.5680
F-statistic	0.335605	(1, 28)	0.5680
Likelihood ratio	0.449069	1	0.5028

Source: Authors' Computation

Table 6 shows the result of Ramsey Reset Test. The result indicates an acceptance of the null hypothesis. This is so because the t-statistics, the F-statistics and the likelihood ratio are not statistically significant at 5% level of significance.

Autocorrelation Test

The Breusch-Godfrey Serial Correlation LM Test was employed to test for the existence of autocorrelation. The null hypothesis is that there is no serial autocorrelation

Table 7: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	3.129314	Prob. F(2,27)	0.0637
Obs*R-squared	6.865779	Prob. Chi-Square(2)	0.0723

Source: Authors' Computation

The result in Table 7 shows absence of autocorrelation since the F-statistics is not significant at 5% level of significance. Therefore, we shall accept the null hypothesis of no serial correlation in the model.

Heteroskedasticity Test

The Breusch-Pagan-Godfrey serial heteroskedasticity test was employed to test for the existence of interdependence of error terms across time in the model. The null hypothesis is that there is no heteroskedasticity

Table 8: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.690105	Prob. F(4,29)	0.6597
Obs*R-squared	4.561360	Prob. Chi-Square(4)	0.6012
Scaled explained SS	3.647156	Prob. Chi-Square(4)	0.7243

Source: Authors' Computation

The result in Table 8 is the heteroskedasticity test. From the test, we accept the null hypothesis as there is the absence of heteroskedasticity revealed by the F-statistics which is insignificant at 5% level of significance.

5. Conclusions and policy implication

From the results of this study, it is clear that while exchange rate is volatile, it has a significant and negative relationship with export performance in Nigeria. Based on the findings, it is recommended that the monetary authorities should closely monitor and manage the exchange rate given the implications of its movements on exports. In furtherance, exchange rate stability will cushion out the effect of inflationary tendencies which have the tendency to affect the growth of export. The government should thus propose and implement policies that will stabilise the exchange rate given its significant

impact on exports in Nigeria. This will help in the reduction of the undesirable impact that exchange rate fluctuations have on the performance of export in Nigeria.

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Impact of Consolidation on Employment in the Nigerian Banking Industry: 2000 - 2020

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Abstract

This study investigates the impact of bank consolidation on employment in Nigerian banking industry. The study determined whether banks consolidation enhances employment in the industry or not. Data were sourced from Central Bank of Nigeria (CBN), Nigerian Deposit Insurance Cooperation (NDIC), and Annual Reports of the commercial banks. Based on Interrupted Time-Series Quasi-Experimental Design (ITSQED), T-test of significant difference was conducted at 5% level of significance on the annual total employment in the industry five years before and five years after the year 2006 consolidation. Finding reveals that the consolidation significantly improved employment in the industry. The improvement was attributed to the complementary role of labour to increased capital. Consequently, it was recommended, that banks should be encouraged to further increase their capital base, but not necessary through mandatory recapitalisation so as to provide more jobs in the industry. This can be done through issuances of stock dividend which increases capital but does not lead to reduction in the number of banks.

Keywords: Banking industry, Recapitalisation, Consolidation, Employment

JEL Classification: C12, E24, E58, G21, G28, G34.

1. Introduction

Central Bank of Nigeria (CBN) by its bank recapitalisation policy of 2005 that increased Nigerian deposit money banks minimum capital base from N2 billion to N25 billion caused most of the banks to embark on mergers and acquisitions to meet the requirement while those that could not meet the requirement were liquidated. This reduced the number of the banks from 85 to 25 banks in year 2006, thereby consolidating the banking industry (CBN, 2006). Subsequently, there were further mergers of Inland Bank with First Atlantic Bank Plc (FinBank Plc), and Stanbic Bank Limited and IBTC Chartered Bank Plc (Stanbic-IBTC bank Plc) that reduced the number to 23 in 2008. Furthermore, from 2009 to 2020, three banks operating licenses were revoked in 2011 due to undercapitalisation; while two new banks entered the industry bring the number of banks in Nigeria to 22 by 2020. Consolidation of any industry through mergers and acquisitions, and outright liquidations of firms has implications on the workforce as the surviving firms in that industry adjust to the new structure and challenges in the industry.

Theoretically, increased regulations on capital requirement influence a bank employment strategy (Lotto, 2018). However, the nature and the level of the impact are contentious and ambiguous. One of the views holds that consolidation results in better management and more productive use of assets, and that efficiency gain from the mergers and acquisitions leads to market power which in turn enhances labour demand that increase employment in the industry making workers to benefit through higher wages (Asongu & Odhiambo 2019; Oberhofer, 2013). The contending view is that the consolidated firms rationalised and use their assets jointly to achieve economies of scale and the downsizing of the overlapping activities brought about by consolidation, include reduction of workforce thus, the productivity gains from consolidation is basically from retrenchment of workers (Brown & Medoff, 1988; McGucking & Nguyen 2001; ILO, 2003; Lehto & Bockerman, 2008; Ayyagari, Juarros, Martinez, & Singh (2016). In the same line of thought, with capital and labour being substitutable, an increase in capital investment may reduce a bank's demand for labour (Dao and Liu, 2017)

In a developing economy like Nigeria, where unemployment is a major economic challenge (Umo, 1996; Nwankwo, 2013), apart from the needs for the banks to be profitable, financially stable, and be alive to their intermediation responsibility, banks are expected to contribute to employment generation as parts of their developmental and social responsibilities. Considering the fact that unemployment posts a huge challenge to Nigerian economy, any policy that affects employment in any sector of the economy is of serious concern. Thus, the pertinent question is, did the consolidation of the Nigeria banking industry enhance employment in the banking industry?

Since the consolidation of the Nigerian banking industry, there have been studies to examine its impact on employment in the industry. However, the existing studies applied qualitative or at most simple percentages and bar charts and sampled banks data for their estimations. The short comings inherent in applying those simple estimation techniques, qualitative approach, and sampled banks data instead of the whole industry might have been responsible for the inconsistency, mixed and; inconclusive findings from those studies. The existing studies can be grouped into two strands depending on their focus and estimation techniques. One of the strands comprising Kanu and Isu (2015); Olatungi and Uwalomwa (2009) examined the effects of the consolidation on employee's job satisfaction and motivation. The second category (Gunu, 2009; Gunu & Olabisi, 2011; Kareem, Akinola & Oke (2014) assessed banks consolidation's impact on employment but used simple percentages and bar charts for their estimations. While, Kareem *et al.* (2014) reported that the consolidation was detrimental to employment in the industry, Gunu (2009) and Gunu and Olabisi (2011) reported that consolidation increased employment in the industry. To fill these existing gaps, this study applied t-test of significant difference estimation technique based on Interrupted Time-Series Quasi-Experimental Design (ITSQED) to investigate the impact of banks consolidation on employment in Nigerian banking industry. The t-test has the capacity to detect whether an intervention (in this case, the consolidation) has had an impact significantly greater than the underlying trend (Cook and Campbell, 1979)

Findings from the study will enhance the understanding of the impact of banks recapitalisation propelled consolidation on employment in the banking industry. This will improve future policies relating to banking industry's consolidation. The remaining parts of

the study are section two which deals with literature review, section three which is on research methodology, section four; which presents the results and discussion, and the final section five present the summary, conclusion and recommendations.

2. Literature Review

Theoretical literature on the influence of consolidation on its industry's employment can be grouped into two. One of the schools of thoughts is of the view that consolidations reduces or retards employment, while the opposing view postulates that consolidation stimulate and increases employment in an industry.

Pointing out retardation effects of firms consolidation on employment, Yousouph (2009) states that an announcement of merger and acquisition that leads to consolidation is usually accompanied by an announcement of massive costs reduction mostly labour intake in the organisations that are coming together. Though, it is presumed by some theorists that an increase in total factor productivity resulting from an increase in the minimum capital base of the banks as a result of consolidating the banking industry leads to increment in employment, the notion of 'breach of trust' put forward by Shleifer and Summers (1988) is of the view that the main reason for consolidation is the opportunity it provides business owners (in this case the banks shareholders) to back out of employment contracts they had with their employees. According to them, mergers and acquisitions normally transfer wealth from employees to shareholders as the employment contracts are reviewed in the new organisation.

In addition to that, it is widely held that consolidation reduces competition, and reduction in competition leads to reduction in employment (Schniewind, 2000). This is because the beneficial outcome of total factors productivity is counteracted by increment in prices that are caused by lower competition. Schniewind (2000) further adds that mergers and acquisitions mostly undermine employment contracts because after merger or acquisition the new organisation formed and its new management most often renegotiate employment contract since the employee is now working for a different organisation quite different from the one he had the initial employment contract.

Georgakipoulou (2000) opines that there are basically four consequences of consolidation on employment. These according to him include; decrease in employment of less specialized categories of staff; increase in employment of specialized and younger staff; changes in the role of organisation's senior staff towards more complex and more flexible duties and serious incorporation and compatibility problems among the various management systems; poor industrial relations and organisation of work. ILO-SAP (2000) observes that the banking industry used to be an industry where its employee worked for a working life time, but that is no longer the case with the spate of consolidation taking place in the industry. Correspondingly, ILO-SAP (2000) agrees with Georgakipoulou (2000) that a change of management allows changes in unwritten contracts, made possible by the expectation that there are always changes after mergers or acquisition.

Other consequences of banking industry consolidation on employment were provided by ILO-SAP (2000) and Pritchette (1987). According to ILO-SAP (2000), increase in non-standard forms of employment (part-time, temporary or contingent work); changing of labour from fixed to a variable cost where collective agreements increase the fixed costs of

employment and when labour laws do not cover non-standard forms of work; changes work from high-cost internal labour markets to more competitive lower cost external labour market. ILO-SAP (2000) goes further to say that part-time or contingent work, individualised and explicitly performance-based reward systems, job insecurity, increases workloads, anxiety and stress are associated with banking industry consolidation. According to Pritchette (1987), mergers and acquisitions distract employees resulting in loss of talents, loss of competition, and loss productivity.

The alternative school of thought postulates that consolidation enhances both the quantity and quality of employment. These are achieved through efficiency and market power which in turn enhance demand for labour thus stimulating employment in the industry (Oberhofer, 2013), furthermore, consolidation is a mechanism for stimulating additional investment in human capital and promoting skill upgrading of the workforce because high quality investment associated with consolidation necessitates high quality and quality labour force (Jovanovic & Rousseau, 2004).

Empirical Literature

The impact of consolidation on employment was investigated by Conyon, Girma, Thompson, and Wright (2002) in the United Kingdom. They studied the impact of more than 400 mergers and acquisitions in the banking industry on company's employment from 1967 to 1996 using generalised method of moment and dynamic panel models. They found out that consolidation caused substantial and statistically significant reduction in employment. It was revealed that smaller acquirers made proportionately larger reduction in employment than bigger ones. Secondly, according to them, hostile merger caused higher reduction in employment than friendly mergers and acquisitions. They attributed the negative relationship between consolidation and employment to high level divestments that took place after those mergers and acquisitions.

Mylonakis (2006) studied the impact of the banking industry consolidation on their staff employment and effectiveness in Greek. Mylonakis (2006) just like Conyon, Girma, Thompson, and Wright (2002) found out that consolidation reduced employment and staff effectiveness in the Greek banking industry. His finding indicates that 3,627 jobs were lost between 1998 and 2003 due to consolidation caused by mergers and acquisitions in the banking industry, whereas those banks that grew on their own without merging with or acquiring other banks increased their employment seven times within the same period. He attributed the waves of mergers and acquisitions that went on to a game theory in which the bandwagon effects had misled everyone to a wrong decision because otherwise it will destroy them and secondly, to the high payments banks managers enjoyed whenever their banks acquired or merged with another bank.

Margolis (2006)'s study on whether employment authorities should worry about mergers and acquisitions reveals that consolidation reduced employment in France. They discovered that mergers reduced employment. Green and Cromley (1982) used t-test analysis to study the motives and spatial employment effects of consolidation in the USA. They found out that consolidation improves employment in USA. Similarly, Gugler and Yurtoglu (2004) investigated the impact of consolidation on employment in USA and Europe using one step GMM-estimator developed by Arellano and Bond (1991). Their own finding however

revealed that consolidation did not significantly reduce employment in USA but reduced the demand for labour by around 10% on average in Europe.

Ullah (2016) examined the impact of bank recapitalisation on employment generation in Pakistan using secondary data and applying simple percentages and linear regression found that recapitalisation significantly increased employment in the banking industry. He attributed the increase in employment to increase in the number of bank branches that resulted from recapitalisation. Behar and Hodge (2007) used OLS with pooled data of 25 years from South Africa to examine employment effects of merger in a declining industry. Gunu and Olabisi (2011) assessed the impact of banks consolidation on employment in the banking industry in Nigeria. Their study was done with descriptive analysis using simple percentages, multiple bar charts, multiple line graph and linear regression employing secondary data obtained from CBN. They showed that banks consolidation increase employment in banking industry.

3. Methodology

The study was based on Interrupted Time-Series Quasi-Experimental Design (ITSQED) in assessing the impact of the consolidation on employment performance of the Nigerian banking industry. Interrupted Time-Series Quasi-Experimental Design (ITSQED) ITSQED design has the capacity to detect whether an intervention (in this case the consolidation) has had an impact significantly greater than the underlying trend. ITSQED is a useful research method for evaluating the impacts of interventions when it is difficult to randomize or identify an appropriate control group (Cook and Campbell, 1979). In using this design, data were collected at multiple periods before and after the intervention (the consolidation); the multiple periods before the intervention allow the underlying trend to be estimated, the multiple periods after the intervention allow the intervention impacts to be estimated. Based on this, t-test of significance difference estimation was applied.

Data Analysis Estimation Technique

An analytical estimation technique of t-test statistics to test mean differences on the quantity of employment in the industry was applied to determine whether there was significant differences in total employment in the industry after the consolidation. T-test statistics is a statistical tool used to test whether there is significant mean difference between two different sets of observations of small size ($n < 30$) drawn from populations that are normal and with identical variances.

t-test statistics formula is given as:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \dots\dots\dots 1$$

Where:

$$S = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} \dots\dots\dots 2$$

If the sample sizes are the same ($n_1 = n_2$), s^2 reduces to $(s_1^2 + s_2^2) / 2$

Where,

\bar{x}_1 and \bar{x}_2 are sample means

s_1 and s_2 are the standard deviations,

s_1^2 and s_2^2 are the variances and
 n_1 and n_2 are the sizes of the observations,
 All of them for sample 1 and 2 respectively
 Sample 1 is pre-consolidation and
 Sample 2 is post-consolidation.

Decision Rule: The study tested whether the consolidation significantly increase total employment in the industry. Based on this, one tailed tests were carried out. The null hypothesis (H_0) was rejected whenever t-calculated value were greater than the t-tabulated value at 5 percent level of significance.

That is: Reject H_0 if $t_{cal} > t_{\alpha=0.05}$ critical value at $(n_1 - 1) + (n_2 - 1)$ i.e. $n_1 + n_2 - 2$ degree of freedom.

4. Results

Data Analysis, Interpretation and Discussion of Findings

Annual total employment in the industry was used to assess the impact of consolidation on employment in the industry. The annual employment figures are presented in Table 4.6a.

Table 1: Annual Total Employment Figures of Nigerian Banking Industry

Period	Pre-Consolidation					Post-Consolidation				
	2000	2001	2002	2003	2004	2006	2007	2008	2009	2010
Total Employment	51275	45926	47451	60227	59227	58903	67597	83489	81432	82673

Source: CBN (2012); Banking Supervision Department.

Total employment in the banking industry reduced from 51,275 in 2000 to 45,926 in 2001 (10.4 percent reduction) as presented in Table 1. This reduction in total employment could be attributed partly to the liquidation of three distress banks (Premier Com. Bank Ltd, Ivory Merchant Bank Ltd., and Royal Merchant Bank Ltd. in 2000; and to the commencement of the universal banking system in 2000. The universal banking system would have reduced total employment because as the distinction between wholesales banking and retail banking was removed and the banks went into the provision of all inclusive financial services duties that were performed by greater number of employees in the industry were now being handled by lesser number of employees. Total employment increased by 3.3 percent in 2002 and increased further by 26.9 percent in 2003 but fell by 1.7 percent to stand at 59227 in 2004.

There was reduction immediately after the consolidation as employment reduced from 59,227 in 2004 to 50,586 in 2005 (14.58 percent) and to 58,903 in 2006 (0.53 percent). These reductions were as a result of the consolidation in the industry as 13 banks (i.e. Royal Merchant Bank Ltd., Afex Bank Limited, Assurance Bank Nig. Limited, City Express Bank Plc, Eagle Bank Limited, Fortune International Bank, Gulf Bank Plc, Hallmark Bank Plc, Lead Bank Plc, Liberty Bank Plc, Metropolitan Bank Limited, Trade Bank Plc, and Triumph Bank Limited) that could not increase their capital base to the minimum of N25 billion requirements nor merge or be acquired by other bank were closed (NDIC Annual Report, 2009) thereby throwing their employees out of the industry.

Employment in the industry thereafter increased to 67,597 in 2007 (14.6 percent increment) and to 83,498 in 2008 (23.5 percent increment). These increments could be attributed to the expansion in the industry as a result of the huge fresh capital from the recapitalisation. Complimentary, more human capital is needed to work with the available capital. It, however, reduced to 81,432 in 2009 as a result of the distress that affected six of the banks (i.e. Afribank with Mainstreet Bank appointed as bridge; Bank PHB with Keystone Bank appointed as bridge bank; Spring Bank with Enterprise Bank appointed as bridge bank, and Fin Bank which was acquired by First City Monument Bank; Intercontinental Bank acquired by Access Bank, and Oceanic Bank acquired by Eco Bank) in 2009 before it moved to 82,673 in 2010 after the CBN intervened by changing the top management and injecting fresh capital to the affected banks. T- Test of significant means difference assisted us to determine whether there was a significant improvement in total employment in the industry after the consolidation.

The results of t-test of employment in the Nigerian banking industry pre and post-consolidation are presented in Table 2.

Table 2: T-test Results for Employment in Nigerian Banking Industry

Measure	Pre consolidation mean	Post-consolidation mean	Difference in means due to consolidation	Standard Error	t-computed	P-Value
Total employment	52828.4 (6598.45)	74818.8 (11023.41)	21990.4	5745.52	3.8274	0.0025

Standard deviations are in prentices.

Source: Author's computation using Stata 9.1.

From Table 2, there was an absolute increase in employment in the industry as the mean increased from 52,828.4 in pre-consolidation to 74,818.8 in the post-consolidation. The means difference is 21,990.4.

To determine whether the change is statistically significant or not, we compare the calculated t value (t_{cal}) with the critical $t_{\alpha(0.05)}$ value, and as confirmations compare the standard error of the means differences with the mean difference itself and consider the probability value (p-value). For the change in the mean differences to be statistically significant (i.e. rejection of the null hypothesis) the t_{cal} should be greater than the $t_{\alpha(0.05)}$ value [i.e. $t_{cal} > t_{\alpha(0.05)}$], confirmatory, the standard error should be less than half the value of the mean difference [i.e. $s(b_i) < b_i/2$] and the probability value (p-value) should not be greater than 0.05 (Gujarati and Porter, 2009).

The results show that t_{cal} value (3.8274) is greater than $t_{\alpha(0.05)}$ critical value (2.306) the standard error of the mean difference (5745.52) is less than half of the means difference (21990.4/2) and the p-value (0.0025) is not greater than the 0.05. These indicate that the change in employment was statistically significant.

Test of Hypothesis

4.2.2 The second hypothesis to be tested states is that consolidation does not significantly improve employment in the banking industry. This second hypothesis corresponds with the

second main objective of the study which is to find out whether consolidation significantly improves employment in the banking industry. This hypothesis is tested using t-statistics of 5% level of significance at 8 degree of freedom. The critical value based on one tailed test is 2.306. The t-calculated is 3.8274. The t-calculated is more than t-statistics critical value. We therefore rejected the null hypothesis and submitted that there was significant increase in employment in the banking industry after the consolidation. The probability value (0.0025) gives additional credence to this decision, as it is significant indicating rejection of the null hypothesis.

Discussion of Findings

The consolidation did not reduce but rather increased total employment in the Nigerian banking industry. This can be explained with these factors. One is the fact that the consolidation took place together with an increased capital inflow to the industry. Increased capital and factor productivity normally increases employment because more labour is needed to complement capital in the production process. Factor productivity increased in the industry as a result of the huge increment in the minimum capital base of the banks. Secondly, the increment in employment in the industry could be due to the intense product market competition among the banks brought about by the huge capital at their disposal and the quest to make quick returns on the huge capital that have been invested in their banks. Normally, intense product market competition makes firms to employ more professionals to handle the situation (Gersbach, 2000).

5. Conclusion and Recommendations

The study investigated the impact of consolidation on employment in the Nigerian banking industry. T- test of significant means difference analytical techniques was employed to determine whether there was a significant difference in the banking industry's total employment between four-years-before and four years after the consolidation, for the analysis. Total employment in the industry increased by 41.63 percent and showed evidence of significant improvement.

Based on the finding, we conclude that the consolidation significantly improved employment in the Nigerian banking industry as against the widely held notion that banking consolidation reduced employment in the industry as the number of banks was reduced. This finding can be attributed to increase in labour demand by the banks to complement the huge capital that was injected into the industry. Since increased capital inflow into the banking industry increases employment in Nigerian banking industry, we, recommend that the banks be encouraged to increase their capital base on their own as dictated by the market and business interests and not through regulatory mandatory recapitalisation policy that can reduce the number of the banks in the industry. This can be achieved by the banks increasing their capital through stock dividends as against cash dividend payment, increase in their leverage and credit line from foreign banks.

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**Tax Evasion and Avoidance by Entrepreneurs and Tax authority's Behaviours:
Impediments to Kogi State's Economic Development**

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Abstract

The purpose of this study is to examine why revenue from taxes in Kogi State are inconsistent, thereby affecting negatively the revenue generated from taxes. The researcher investigated tax evasion and avoidance by entrepreneurs in Kogi State to see what implications they have on the Nigerian economy. The board of internal revenue in Kogi State has been constantly criticised for being corrupt, not transparent and giving low accountability. Questionnaire, interviews, and documents analysis were used. The interviews from across Kogi State were analysed from the interview transcript and data from the questionnaires were analysed using descriptive statistics. The findings show that the Board of Internal Revenue in Kogi state does not enlighten the citizens on what, how, why, and when to pay taxes; Tax officers do not properly account for taxes collected; there are no social amenities to show for the taxes paid by the people; findings also show that taxpayers pay tax for fear of the law enforcement agents and from being prosecuted. It was recommended that revenue officers should not be employed based on party, religious or ethnic affiliations to allow for proper accountability; qualified accountants should be employed to occupy strategic positions in the Board; tax authorities should embark on tax enlightenment campaigns to tell the people why they should pay tax; tax laws should be vigorously and promptly enforced; and government should not engage tax contractors and consultants in collecting taxes.

Keywords: Tax, Evasion; Avoidance; Entrepreneurs; Authority; Economic, Development

JEL Classification:

1. Introduction

Government must perform its obligations to its citizens. Government must ensure that there are peace, order, security and perform other economic, industrial and social functions to its citizens. To meet these obligations, government must raise revenues. The question is where does government get these revenues from to perform these functions? Revenue is any form of income (receipts from sales or money received by the government from the imposition of taxation) or cost or any income items that are either charged or credited to the profit and loss accounts for an accounting period (Oxford Accounting Dictionary, 2010; Oxford Economics

Dictionary, 2009). All revenues collected by the government are paid into the Federation Accounts. This account is a special distributable account where the Federal, State and Local governments derived their revenues from based on the terms and manners prescribed by the current law. Consolidated Revenue Fund Accounts [CRFA] (Federal Government Accounts) is an account where all revenues accruing to the Federal Government are paid into. The Consolidated Revenue Fund Account (CRFA) is an account established by the Constitution of the Federal Republic of Nigeria (1999) as amended. All revenues derivable from all sources by the Federal government are paid into this account. Revenues from Direct and Indirect Taxes, Licenses and Internal revenue, Mining Fees, Earning and Sales, Rent of government property, Interest and repayment (General and States), Reimbursements, Armed forces and other miscellaneous revenues are paid into CRFA.

Taxation is one of the revenues accruing to the government to carry out its obligations as noted above. Taxation is a levy by the government on individuals and corporate bodies (firms) to finance its expenditures and also a means of implementing its fiscal policies (Oxford Accounting Dictionary, 2010; Oxford Economics Dictionary, 2009). It is a means of transferring resources from the private sector (Entrepreneurs) to the public sector to enable government fulfills its obligations to its citizens. Government raises revenues to meet its expenditure obligations; to control the state's economic life; as a means of redistributing income (a means of controlling inequality within the society); to protect and promote home industry by imposing discriminatory tariffs; to regulate the social behaviour of its citizens; and most especially to control inflation. These are grouped into 4Rs tax system, namely: The first R – Revenue: taxes are levied to raise revenue to pay for social amenities like education, health, defence, electricity and so on; Second R – Re-distribution: tax revenue is raised to combat poverty, inequality, and to spread the benefits of development to all nooks and crannies of the country; The third R – Re-pricing (subsidies); it is used to fight harmful activities through change of behaviour. The fourth R – Representation; It means the demand for representation in return for tax payment from the state.

The taxes government collects is to make available the goods and services that cannot be divided among its citizens. For instance, maintenance of law and order, defence against external aggression, provision of infrastructure and regulation of trade and business are the primary duties of the government of a country. Government of the day complains of failure to meet its obligations as a result of tax evasion and avoidance; taxpayers say they do not see the evidence of tax they have been paying to trigger them off to pay further tax; and the tax authorities express unhappiness over the taxpayers' attitude of not paying their taxes promptly (Adebisi & Gbegi, 2013). There are therefore expectation gaps between the taxpayers and the tax authorities. This study identifies these expectation gaps and proffer solution to tax evasion and avoidance in Kogi State.

The inspiration of researching this topic comes from the high publicity given to the struggles of payment of salaries and the provision of social amenities by the government. Nigerian daily newspapers often carry various captions such as: “Non-payment of salaries: Kogi Assembly summons Head of Service, Accountant-General” (Akinfehinwa, 2017); “Nigeria: Kogi Workers Groan Over Non-Payment of Salaries” (Itodo, 2019); “Non-Payment of Salaries of Judiciary Staff In Kogi State: The True State Of Affairs” (Fanwo, 2019); ‘Primary school teachers decry non-payment of salary in Kogi’ (Akinfehinwa, 2019); “Kogi: Deputy to sue governor over non-payment of salaries, entitlements” (Adeyemi, 2019). The research becomes necessary as the professionals (Lawyers, Accountants, Doctors, Architects, Surveyors, Consultants, etc.), contractors, politicians, mechanics, traders, welders, vulcanizers, farmers, carpenters, tailors, butchers, hair dressers, bricklayers, drycleaners, dyers, artisans and all residents in Kogi State get their patronage from the civil servants after they have been paid their salaries.

This research intends to find out the factors that can impact on tax compliance by entrepreneurs in Kogi State, to examine the effectiveness of tax authorities in Kogi State and ascertain if the provision of social amenities by the government reduces tax evasion and avoidance. This study will be of immense importance to the Kogi State government and Nigeria as a whole in that the government will from this study know its strengths and weaknesses in the provision of social amenities and what its citizens are saying about its governance. This will help the government to adjust for the development of Kogi state and Nigeria in general. Tax authorities will also know their pitfalls in assessment and collection of taxes and adjust. The taxpayers will understand their civic responsibilities and try to neither evade nor avoid tax payment. This study contributes to knowledge by the use of neopatrimonialism that answers research questions which has never been used in the history of Kogi State as regards tax evasion and avoidance. The research was conducted to unveil the factors responsible for tax evasion and avoidance in Kogi State, Nigeria. Although different types of taxes exist, the researcher is limited to the investigation of tax evasion and avoidance in respect of personal income tax among entrepreneurs (self employed persons) like Doctors, Lawyers, Accountants, Farmers, Traders, Contractors. The reason for the limitation in scope is to allow for effective data collection, design and availability of scarce resources both time, money and material to the researcher. Note also that the power to assess the profit of companies is vested in the Federal Board of Inland Revenue Service (FBIRS) and not State Board of Internal Revenue Service (SBIRS).

2. Literature Review

Concepts

There can be no civilisation without government. There can be no government without adequate revenue. Government raises revenue to carry out its obligations to its citizens. In the past, kings and emperors raised revenues for their personal use. Government, instead of kings and emperors, now began to raise revenue through taxes to defray the cost of maintaining law and order, and defence against external aggression. Tax is the amount of money that a person or group of persons compulsorily pays to the government in accordance with one’s income, property, goods and services that is used to pay for public services and perform other social responsibility (Yunusa, 2015). Kogi State Internal Revenue (Amendment) Act 2011 defines Tax as “a compulsory contribution paid to government by

its citizens to support the law and order, security and social amenities such as schools, electricity, portable water, roads and hospitals for the benefit of the citizens”.

Adam Smith in his book “The Wealth of Nations” (1776) states that in levying taxes, people in the same circumstance should pay the same tax (the principle of equality); people should pay tax at the time that is convenient to them (convenience principle); the cost of collecting tax should not be more than the revenue yield (economy principle); and the money to be paid, time of payment, and manner of payment should be made clear, plain and certain to the tax payer (the principle of certainty).

Taxation is divided into: *First*, Direct Taxes are levied on the incomes of individuals and profits of firms – Personal Income Tax (e.g. salaries, wages, income from rents and interest from investments); Company Income Tax (e.g. profits of incorporated business); Capital Gains Tax (e.g. tax on gains in disposing an assets of individuals or companies); and Petroleum Profit Tax. *Second*, Indirect Taxes are levied on expenditures on goods and services such as taxes levied on imported goods and services (Import duties); levies on exported goods and services (Export duties); tax imposed on expenditure of selected goods and services (Value Added Tax [VAT]); tax on goods produced in the country (Excise duties); and other miscellaneous duties like Pool tax, entertainment and Casino taxes.

Again, tax can be: *progressive* (the rate of tax increases as income increases); *proportional* (tax is being paid according to the proportion of one’s income- in this case a constant rate of tax is applied to the increasing rate of tax base); and *regressive* (tax rate decreases with increase in tax base – this means the more you have the less you contribute).

Tax authority, according to a guide to payment of Tax issued by the Kogi State Internal Revenue Service, is a person or body of persons saddled with the responsibility of administering taxes, under a law of a territory. The recognised Tax Authorities in Nigeria are as follows: Federal Inland Revenue Service (at the federal level), State Internal Revenue Service (at the state level), and Local Government Revenue Committee (at the local government level)

Kogi State Tax administration

Kogi State is a confluence state where rivers Benue and Niger meet. It was former Kabba Province of Northern Nigeria. It was created in 1991 by General Ibrahim Badamasi Babangida along with other nine states. Kogi State was carved out of Benue and Kwara states. Kogi State is a State in the central region of Nigeria. Lokoja, the state capital, was the first administrative headquarter of Nigeria. Kogi State has 21 local government areas and hosts Ajaokuta Steel Company Limited. After the creation of Kogi State, the need to generate revenue to meet her administrative needs arose.

There is a body known as the Board of Internal Revenue Service (BIRS) headed by a chairman (Kogi State of Nigeria Gazette, 2017). The chairman is the Chief Executive and accounting officer of the Internal Revenue Service and he is responsible for the execution of the tax policies of the government and the day to day administration of the Internal Revenue Service. The Board reports to the Governor of the state. The Board has an operational arm called Kogi State Internal Revenue Service (KSIRS). Kogi State of Nigeria Gazette (2017) states that the Internal Revenue Service consists of the following departments: Administration and Finance; Collection and Accounts; Road Taxes; Audit and Compliance;

Personal Income Tax; Other Revenue; Monitoring and Enforcement; Legal; PAYE, Direct Assessment; Business Development; and Planning, Research and Statistics.

Kogi State Internal Revenue Service (KSIRS) has power to administer any law on taxation in respect of which the State House of Assembly or the National Assembly may confer power on it. The KSIRS may, with the approval of the Governor, by instrument appoint any Ministry, Department and Agency (MDA) to collect revenue pursuant to its powers under subsection 2 of section 42 (Kogi State of Nigeria Gazette, 2017).

Tax Authority

Tax Authority, according to KSIRS (nd), means the person or body of persons responsible under a law of a territory, with the responsibility of administering taxes. The following are the recognised Tax Authorities in Nigeria: Federal Inland Revenue Service (at federal level), State Internal Revenue Service (at state level) and Local Government Revenue Committee (at local government level).

Tax Evasion and Avoidance

Tax evasion involves minimising one's tax liabilities illegally. It means not disclosing one's incomes or making false declaration of one's incomes to tax authorities. It involves suppressing information or submitting to tax authorities' false information or refusing to supply information. It is a deliberate act not to pay tax. Tax evader is liable to severe punishment (Oxford Accounting Dictionary, 2005; Oxford Economics Dictionary, 2009; Kaplan, 2009).

On the other hand, Tax avoidance is planning of tax so that one will minimize one's tax liabilities legally with full disclosure to the tax authorities. It involves arranging one's tax affairs in accordance with the requirements of the tax laws in order to pay little tax without breaking the law. It is tax schemes that involve using the loopholes in tax legislation to minimize tax liabilities (Oxford Accounting Dictionary, 2005; Oxford Economics Dictionary, 2009; Kaplan, 2009).

Entrepreneur

An entrepreneur is a person who combines other factors of production (Land, Labour and Capital) to produce goods and services. He bears the risks and takes major decisions in order to obtain maximum profit (Ade, 2005). Entrepreneur bears risk, combines factors of production, exploit every perceived opportunity in order to evoke demand, create wealth and employment. An entrepreneur is an innovator, risk taker, adventurer and must have these characteristics in order to survive in his/her entrepreneurial pursuit: self-motivated, good communicator, visionary, mental stability, creativity and ability, good human relations, and possession of specialized knowledge and understanding (see NOUN course guide ENT209, 2017).

A guide to payment of Tax issued by the Kogi State Internal Revenue Service gives the following as the example of entrepreneurs and they are chargeable to tax under direct assessment: Professionals (Lawyers, Accountants, Doctors, Architects, Surveyors, Consultants, etc.), contractors, politicians, mechanics, traders, welders, vulcanizers, farmers, farmers, carpenters, tailors, butchers, hair dressers, bricklayers, dyers, artisans and all residents in Kogi State who have any source of income.

Entrepreneurship enables people to be job creators rather than job seekers thereby reducing the burden on the government and large organisations for salaried employment. It helps graduates, school leavers, retired/retrrenched workers, and former politicians to upgrade their welfare and then contributing to sustainable economic development (Fatunla, 1997).

Sustainable Economic Development

Development is empowering people to make choices, making people to participate in decisions that affect them, and to serve as the agent of change (Ighodalo, 2012). It is physical and state of mind in which the society has obtained a means of better life (Todaro & Smith, 2004, in Itodo, 2005). Better life includes the following: Access to food, shelters, health and security; increasing income with the provision of employments, better education, greater attention to cultural values, and increase in individual and national self-esteem; and freedom of individual and nation from servitude. Where there is corruption, disaster, or war, development cannot thrive. According to Ighodalo (2012), development ensures to proper extraction of natural resources without being allowed to deteriorate.

Economic development is an improvement in the quality and quantity of goods and services delivered to an ordinary man (Todaro & Smith, 2004 in Itodo, 2005). It is described by Todaro and Smith (2004) as a means of generating and sustaining an annual increase of a country's Gross National Product (GNP). Economic development is an economic transformation of a country or a region that leads to the improvement of the well-being and economic capabilities of its residents (Oxford Economics Dictionary, 2009).

Economic development is linked to some theories explaining why some countries are developed while others are not developed. These are: Sociological theory – this states that a country can become under-developed when its citizens evade and avoid taxes payment, do not invent/create, do not work hard, absent themselves from work, and lethargic attitude; Colonial background theory – this explains that a nation becomes under-developed because they were exploited and continued to be exploited by their former colonial masters; Climatic development theory – this school of thought believes that a country with temperate climate can easily develop but a country with too hot or too cold hardly develop easily; and Puritanical ethic theory – this emphasizes that a country that is self disciplined, abstains, work and saves will develop (see Ande, 2005).

Ande (2005) also put forward the following characteristics of under-developed countries: low level of savings, low level of investment, lack of adequate capital, lack of skill manpower, lack of industrialization, lack of infrastructural facilities, low level of technology, high level of illiteracy, leadership problems, dependence on imports, dependence on agriculture, dependence on foreign nations, population explosion, inadequate development plan, lack of organised markets, financial misappropriation/embezzlement, corruption, and political instability. All these make economic development of a country to be unsustainable.

Empirical Review

From the review of literature it was revealed that there are few studies carried out on tax evasion and avoidance on some states in Nigeria. Fagbemi, Uadiale, and Noah (2010) investigated The Ethics of Tax Evasion: Perceptual Evidence from Nigeria. Statistical test was undertaken to analyse the data. The results showed that tax evasion is an unethical

practice. The result also showed that the level of tax evasion will increase if government is corrupt, unfair treatment of taxpayers, and with unfavourable tax system. It was recommended that government should ensure it is fair, accountable and transparent in the administration of tax system. Adebisi and Gbegi (2013) looked into effect of tax avoidance and tax evasion on personal income tax administration in Nigeria. Analysis Of Variance (ANOVA) was used in analysing the data collected. The results showed that enlightenment campaigns and reduction in tax rates will discourage tax evasion and avoidance. They recommended that tax officials should be trained and re-trained, government should embark upon deliberate enlightenment campaigns and reduce tax rate. Ibadin and Eiya (2013) studied Tax Evasion and Avoidance Behaviour of the Self-Employed Nigerians comprising six states of the Nigerian six geo-political zones of Anambra, Benue, Borno, Edo, Kaduna and Lagos states. They administered 600 questionnaires using descriptive statistics of ANOVA and Ordinary Least Square (OLS) method of regression to analyse their data. The results showed that tax evasion is sometimes ethical and that significant relationship exists between the ethical view, mode of tax administration and cultural practices of the self employed. They recommended that government and tax authorities should always review tax rates to reflect present economic conditions, and tax laws should be less technical for easy interpretation.

Oladipupo and Obazee (2016) examined tax knowledge, penalties and tax compliance in small and medium scale enterprises in Nigeria. Data were analysed using Ordinary Least Square regression analysis method. The findings showed that the knowledge of tax by taxpayers has positive significant impact on tax compliance but penalties have insignificant positive impact on tax compliance. Since tax knowledge produces higher level of compliance, it was recommended that government and tax authorities should do everything possible to increase people knowledge about tax payment. They recommended further that tax education should be included in the school curricula. Two researchers who carried out a study on the effects of tax evasion on government revenue generation in Oyo State, Nigeria were Folayan and Adeniyi (2018). They analysed the data collected by using descriptive and inferential statistical tools with the aid of Statistical Package for Social Science (SPSS), window 23. The findings of the research showed that the estimated revenue is far more than the actual revenue collected. It was also discovered that perceived corruption on the part of tax authority will lead to tax evasion. They recommended that government should embark on public enlightenment campaign, reduce tax rate, and utilize the revenue from taxation on social amenities to discourage tax evasion and avoidance. Ellawule (2018) investigated the effect of tax evasion on the economic development of Yobe state, Nigeria. The researcher used Statistical Package for Social Sciences (SPSS) version 20 to analyse the data collected. It was recommended that Yobe State government should utilize the revenue from taxes collected from the taxpayers to reduce insurgency in the state.

On the whole, the above studies do not have strong theoretical base. Moreover, many of these researchers dwell on tax evasion and avoidance without pinning down a particular type of tax system that is prone to evasion and avoidance. Some of the studies worked on personal income tax in respect of employees to mean direct assessment tax which makes taxpayers to conveniently dodge payment. Personal income tax in respect of employees can neither be evaded nor avoided because it is deducted at source from employees' monthly

salaries. This study focuses on tax evasion and avoidance by entrepreneurs in Kogi State using neopatrimonialism as a major theoretical base. The empirical findings (using questionnaires and interviews) and neopatrimonialism (theoretical framework) in this study are contributions and fill the gap in tax evasion and avoidance.

Theoretical Frameworks

Neopatrimonialism is a system of governance where state duties concerning resource distribution rests with the politicians and their friends (Nawaz, 2008). It is a situation where a bureaucrat of a state uses personal judgment instead of rules to administer; people in positions use their offices to acquire wealth thereby leading to under-development, economic and socio-political problems. Neopatrimonialism weakens governance and accountability by preventing the state to collect its full revenue (Soest, *et al.* 2011). This is because in neopatrimonial state, the appointments of tax officers are patronage appointments and they are only accountable to their patrons and will be protected from prosecution if they are caught (Soest, *et al.* 2011). In Nigeria for instance, according to Amadasun (2016), there exists Nigerian mafia tax system who are tax contractors and consultants. This group assesses and collects taxes but never remits them into government treasury. Neopatrimonialism hinders the vulnerable in the society, limits access to public resources, leads to insecurity, and is a danger to peaceful development of a society.

3. Methodology

Survey research design was used for the study. The instrument used was structured questionnaire. Questions in the questionnaire have four options for the respondents to tick one. The study was conducted in Kogi State. The population of this study is five hundred (500) self employed taxpayers under direct assessment tax system that fall under the jurisdiction of Kogi State Tax administration and staff of Kogi State Board of Internal Revenue Service. Out of this five hundred, four hundred (400) represent self-employed taxpayers while one hundred (100) represent the staff of Kogi State Board of Internal Revenue Service. Based on the rule by Ezejeule and Ogwo (1990) that 10% is to be used as sample, 50 became the sample size as follows: That means 10% of 400 = 40 for self employed taxpayers and 10% of 100 = 10 for the staff of the Board of internal Revenue. Because of time and financial constraints, questionnaires were served on respondents using cluster sampling for investigation. Four major Local Government areas in Kogi State were selected for investigation: namely: Lokoja Local Government-10 questionnaires were given to self-employed taxpayers in Lokoja to fill; Kabba-Bunu Local Government-10 questionnaires were given to self-employed taxpayers in Kabba to fill; Okene Local Government-10 questionnaires were given to self-employed taxpayers in Okene to fill; and Dekina Local government-10 copies of the questionnaire were given to self-employed taxpayers in Dekina to fill. On the other hand, two copies of the questionnaire each were given to the staff of the Board of Internal Revenue Service stationed in the four local governments and the remaining two were given to the staff of the Board of Internal Revenue at the Board headquarters in Lokoja to fill. The copies of the questionnaire were given to the respondents directly by the researcher who guided them on how to fill them.

Face to face personal interview was also conducted especially to make clearer some issues raised in the questionnaire. After the questionnaires were filled by the respondents, the researcher then asked them some questions in form of interview, this time on matters not in

the questionnaires to elicit more information from the respondents. In this connection, the method of Interview used was unstructured Interview. The content of the questionnaire was divided into four sections: Section A deals with respondent's bio data; section B deals with research question one; section C deals with research question two, and section D deals with research question three. To test the validity and reliability of the questionnaires, they were piloted on some self-employed taxpayers and staff of the Board of Internal Revenue Service within Lokoja metropolis, and all errors that were discovered were corrected before administration proper. Primary data used are the questionnaire and the interview while secondary data were from newspapers, encyclopedia and annual reports, Annual Budgets for 2014, 2015, 2016, 2017, 2018, and 2019 from Kogi State Budget office, and other publications from Kogi State Tax office. The researcher is committed to interpretive theory which is located at interpretive paradigm of Burrell and Morgan (Laughlin, 1995; Burrell and Morgan, 1979).

4. Results

Analysis and interpretation of data

The research findings from the questionnaires were classified into the information obtained from the officials of Kogi State Internal Revenue Service and those from the entrepreneurs. The interpretation and analysis of data were tabulated using statistical tables based on percentage distribution of responses.

Findings on tax evasion and avoidance from the perspectives of Kogi State Internal Revenue Service: On the question in the questionnaire: Does the taxpayer know the time, place and amount to pay for tax? The responses are as set in Table 1 below.

Table 1: The knowledge by the taxpayer of the time, place and amount to pay

Responses	Respondents	Percentage (%)
Yes	8	80
No	-	-
Not Always	2	20
Total	10	100

Source: Author's field work, 2020.

From the above table (Table 1), 20% of the respondents agreed that taxpayers are not always aware of the time, place and amount of tax to pay while 80% of the respondents said the taxpayers are aware of the time, place, and amount of tax to pay. Taxpayers have the right to know the time, place, and amount of tax to pay. Payment of tax will be at the convenience of tax authorities if the taxpayer does not know the amount of tax to pay. However, from the table above the taxpayer knows the time, place, and how much to pay for tax. That means the majority of the respondents agreed that taxpayers are aware of the time, place, and amount of tax to pay.

Another question in the questionnaire which the staff of the Kogi State Internal Revenue Service answered is: When tax rate is increased, how do taxpayers react?

Table 2 Reaction to increase in tax rate (in the perspectives of IRS)

Responses	Respondents	Percentage (%)
Compliance becomes low	8	80
Refused to pay	2	20
No reaction is witnessed	-	-
Total	10	100

Source: Author's field work, 2020

From the above table (Table 2), 20% of the respondents agreed that taxpayers will refuse to pay tax when the rate of tax increases but 80% will pay but not as quickly as it used to be. That implies that the compliance with payment of tax will not be total. That means the majority of the respondents agreed that taxpayers will pay but not as quickly as it used to be.

Another question put forward in the questionnaire for the staff of the Kogi State Internal Revenue Service to answer is: Are there any differences between the estimated revenue and actual tax collected?

Table 3 Difference between estimated revenue and actual tax collected

Responses	Respondents	Percentage (%)
Yes	9	90
No	1	10
Total	10	100

Source: Author's field work, 2020

Table 3 shows that 90% of the officials of the Kogi State Internal Revenue Service interviewed through questionnaire said there used to be difference between taxes collected and estimated revenue. But 10% said there used to be no difference. Face to face interview revealed that there used to be corruption, embezzlement, misappropriation of revenue collected. Revelation of the activities of the officials of the Internal Revenue Service shows that there are evidences of collusion with the taxpayers to pay less tax and the officials will be settled. That means the majority of the respondents agreed that there are differences between estimated revenue and actual tax collected.

The researcher was supplied with the budget of the Kogi State Internal Revenue Service for the period from 2014 to 2018 to see the trends of revenue collected and estimated revenue for that period. See Table 4 below.

Looking at the above table (Table 4), in 2014, 2015, and 2016, there were negative differences between the estimated revenue and revenue collected. The reasons, according to interviewees, are that taxpayers are not voluntarily complying with tax laws to pay tax; taxpayers are making false declaration of their incomes; the Internal Revenue Service lacks necessary logistics to carryout effective and constant tax drive; taxpayers do not keep necessary books of accounts of their business transactions leading to understatement and under assessment by IRS; audited accounts are not presented to Internal Revenue Service; and the 5% withholding tax are not remitted by the government to the IRS.

Table 4: Estimated revenue and Actual revenue collected by Kogi State government compared

Year	Details	Estimated revenue (N)	Actual revenue collected (N) (%)	Difference between estimated & actual collected revenue (N) (%)	Difference between actual revenue collected of different years (N) (%)
2014	Direct Assessment	90,000,000.00	36,065,175.98 (40%)	(53,934,824.02) (60%)	-
2015	Direct Assessment	60,000,000	32,915,462 (55%)	(27,084,538) (45%)	(3,149,713.98) (09%)
2016	Direct Assessment	40,000,000	27,521,060 (69%)	(12,478,940) (31%)	(5,394,402) (16%)
2017	Direct Assessment	2,600,000,000	46,262,088 (02%)	(2,553,737,912) (98%)	18,741,028 (68%)
2018	Direct Assessment	800,000,000	76,140,355 (10%)	(723,859,645) (90%)	29,878,267 (65%)

Source: Kogi State Budget Estimates from 2014 – 2019 (Revenue Details).

Moreover, there were positive differences between the actual revenue collected between 2016, 2017, and 2018. These positive differences are as a result of what the IRS called “Backward Investigation” and “Backward Tax Audit”. The Backward Investigation is a process whereby the IRS will examine the records or activities of a taxpayer going back for the past ten (10) years, while in the case of Backward Tax Audit, the records of the taxpayer for the past six (6) years will be audited. The backward investigation and backward tax audit carried out by the IRS led to large recoveries of tax evaded and avoided by taxpayers and hence the positive figures in 2017 and 2018 as shown on table four (4) above.

Findings on tax evasion and avoidance from the perspectives of self-employed taxpayers: A question was put forward to the taxpayer: are you assessed to tax on equal basis with your professional colleagues?

Table 5: Assessment to tax on equal basis with professional colleagues

Responses	Respondents	Percentage (%)
Yes	30	75
No	10	25
Total	40	100

Source: Author's field work, 2020

Table 5 shows that taxpayers are assessed to tax differently. This will lead to tax evasion or avoidance. While 75% of the respondents said yes, 25% said no. This difference may be as a result of the different volume of their work and account presented to IRS.

One of the interviewees said that “we are not taxed equally. What they do is to come and look at our shops and tell us what we should pay. No accounting record is accepted by them. They will give us a flat amount and further tell us to come to their office to pay. The amount we usually pay cannot be the same.” That means the majority of the respondents agreed that taxpayers are assessed to tax on equal basis with their professional colleagues.

Taxpayers were asked: If tax rate is increased, what do you do?

Table 6 Reaction to the increase in tax rate (in the perspectives of taxpayers)

Responses	Respondents	Percentage (%)
Find it difficult to pay tax	28	70
Refuse to pay tax	-	-
Pay but late	12	30
Total	40	100

Source: Author's field work, 2020

The findings from the field viewing Table 6 showed that when tax rate is increased, 28 respondents representing about 70% find it difficult to pay while 30% pay but late. It will be advisable then that the tax rate should be increased when the taxpayer will be able to comply better. That means the majority of the respondents agreed that taxpayers will find it difficult to pay when the rate of tax is increased.

Another question to the taxpayer: If all necessary amenities are provided for your community/village will you be happy to pay tax?

Table 7: Taxpayers' reaction to the provision of amenities

Responses	Respondents	Percentage (%)
Yes	40	100
No	-	-
Total	40	100

Source: Author's field work, 2020

Table 7 reveals that 100% of the respondents will pay tax if government is using the tax money effectively. This means that the taxpayer will respond positively to the payment of tax if government is faithful in using the money collected for the purpose it is meant for. That means all the respondents agreed that taxpayers will pay tax if government is using the tax money effectively.

On the question in the questionnaire: Do you know the time, place and amount to pay for tax? The responses are as set in Table 8 below.

Table 8: The knowledge by the taxpayer of the time, place and amount to pay for taxes

Responses	Respondents	Percentage (%)
Yes	10	25
No	-	-
Not Always	30	75
Total	40	100

Source: Author's field work, 2020.

From the above table (Table 8), 75% of the respondents said they are not always aware of the time, place and amount to pay for taxes while 25% of the respondents said they are aware of the time, place, and amount to pay for taxes. Tax authorities should make the taxpayers know the time, place, and the amount to pay for taxes. That means the majority of the respondents agreed that taxpayers are not always aware of the time, place and amount to pay for taxes.

Discussion of findings

On the role of IRS in enlightening the taxpayers on the necessity of paying tax, the findings have shown that the IRS is not doing enough to enlighten the people on the necessity to pay tax. There are some jingles on the radio Kogi but many people said they are not interested in listening to radio Kogi. There are other news media in Kogi – Grace F. M. radio, NTA, Newspapers, posters and loudspeakers can be used to reach out to people about the necessity of paying one's tax. IRS should make frantic effort to enlighten the taxpayers in all the languages in Kogi state and to reach out to them telling them about the importance of paying their tax as part of their civic responsibilities. Some people may not know the time, place, and amount to pay their tax. It may not necessary be that they want to evade or avoid payment of tax. Payment of taxes will be at the convenience of tax authorities if taxpayers do not know the time, place and amount of tax to pay.

On the reaction to increase in tax rate, using questionnaire and oral, face to face interview revealed that if tax rate is increased, compliance and payment of tax will be low. Sometimes the time of increase will make it difficult for the taxpayer to pay their tax. For instance, if salaries are not paid, people will find it difficult to buy thereby affecting the shop owners. If tax rate is increased at the time salaries are not paid, taxpayers may not be able to comply with tax payment.

Government should note too that the nature of Africa society depending on one another, the burden of increment will be too much on the people. Government should take into consideration the welfare of the people as done in other countries before increasing the rate of tax. From the IRS account and the account of the taxpayers, tax evasion and avoidance will increase with the increase in the rate of tax unless there are palliative measures by the government to cushion the effect of tax increase. Other taxes like state environmental tax, traffic offence tax enforced by torts, sales tax (duplication of VAT), military check points tax, police road block tax, customs inland intra-national border checkpoints tax are burdens on taxpayers and make it difficult for CBN to fight inflation (see Amadasun, 2015). This puts a burden on taxpayers thereby leading to tax evasion and inability to provide jobs for unemployed Nigerian youths.

On the assessment to tax on equal basis with professional colleagues, taxpayers will find it difficult to pay tax if he is not assessed to tax at the same face value with their professional colleagues. The question is, why is it that the taxpayers are taxed arbitrary? Why are they not taxed based on their profits or gains? Why doesn't the IRS insist on having their accounts prepared and audited and then taxed as in the law of taxation? This gives room for 'negotiation' which is in line with theory of neopatrimonialism that states that organisations are managed based on arbitrariness and not on rationality (Bartol and martin, 1998). The use of mafiadom who help political class to "perpetuate themselves in power through electoral fraud, gangsters or rigging" (Amadasun, 2016 p.3) as tax contractors and consultants will affect the government realising its full revenue from taxation. This is against the theory of taxation which states that there should be fair distribution of the burden of tax among the citizens. This is the Theory of Ability to pay.

On taxpayers' reaction to the provision of amenities, the provision of amenities is a motivating factor that will make the taxpayer to abhor tax evasion and avoidance. From

Table 7 above, all the respondents agreed that if government will provide security, education, health, roads and other infrastructural facilities for them, there will be no need to tell them before they perform their civic responsibilities. For this reason, people pay their taxes not because of their civic responsibilities but because of the law enforcement agents. The purpose of taxation as seen from the very beginning of this study is to provide basic amenities to the citizenry. If revenue is raised through taxation and not used for the purpose it was meant for, then the purpose is defeated and hence tax evasion and avoidance. This is in line with the theory of benefit. This theory states that taxes should be levied based on the benefit received.

In conclusion, many factors have been identified to be responsible for tax evasion and avoidance. These factors are negligence on the part of tax authorities for not working faithfully by saying come for 'negotiation' resulting in poor tax administration, and the low incomes of taxpayers, lack of co-operation with the IRS, and lack of provision of amenities by the government are responsible for tax evasion and avoidance. The taxpayers, government, and tax authorities (IRS) have to do the right thing to ensure the rapid development of kogi state.

5. Conclusions and Recommendations

In general, from the findings, the factors responsible for tax evasion and avoidance originated from the tax authorities, taxpayers and the government. Government and taxpayers need to do more to bring the Kogi State Internal Revenue Service into sound footing to reduce if not eliminate these twins called tax evasion and avoidance from Kogi State. Government should do more to encourage the tax authorities and taxpayers.

Revenue through taxes is the first need before debt of any government. The following recommendations are made to help in the development of Kogi State, Nigeria: Revenue from taxes is certain and therefore government should ensure that tax authorities are adequately and efficiently staffed to raise correct assessment and to promptly collect all taxes for the development of Kogi State, Nigeria. The staff of Kogi State Internal Revenue Service should be properly remunerated, promoted as and when due and given other incentives to avoid the slogan "come to our office for negotiation." Also the use of tax contractors and consultants should be discontinued. Any staff of the IRS who goes against the tax laws should be sanctioned according to the law of the land.

Government should do all it can to reduce the tax burden on the citizens because of the nature of African society with polygamy and the need of the extended family. Government should try as much as possible to provide all amenities for the people to enjoy what they paid for. All tax laws should be totally enforced. Tax evasion and avoidance should be frowned at. No evader should go unpunished to serve as deterrent to others. Revenue from taxes is the breath in the nostrils of the government. Taxpayers should pay their taxes before complaining. This is one of their civic responsibilities. This is to ensure that government should not stop functioning or performing its responsibilities. Government should give at least five (5) years tax holiday to entrepreneurs to enable them have to employ many job seeking youths. For the development of Nigeria and to ensure large revenue to Kogi State government, the federal government should make sure that Ajaokuta Steel Company limited

(ASCL) is completed. This is so because of the enormous revenue through taxes that will accrue to Kogi State government and the federal government of Nigeria.

Limitation of the study and further research

The present study has weaknesses. Kogi State is a segment of Nigeria. For this study to be limited to Kogi State is a weakness of this study. Another weakness of the study is that the study is limited to self employed people who are assessed to tax by direct assessment whereas there are other tax systems available to Kogi State. For instance there are other taxes levied by Kogi State like Personal Income Tax, Withholding tax, Motor Vehicle resale tax, Consumption Tax, Property Tax, Motor Vehicle Tax, Stamp Duty Tax and so on. Further research should consider the above other taxes and use the theories of Neopatrimonialism, the theory of benefit, and the theory of ability to pay in their studies. This study can be done in another state of Nigeria or Nigeria as whole using the theory of Neopatrimonialism.

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The effect of Sub Saharan African import Weighted Tariff policy on Foreign Direct Investment

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Abstract

The share of FDI in SSA has increased but its share in the global economy is way far less compared to Asia. This study seeks to investigate empirically the effect of SSA import weighted tariff policy on FDI, using non-stationary heterogeneous panel, the study cover a panel of 24 Sub Saharan African countries spanning the period 1988 to 2017. The study employ the Panel auto regressive distributed lag model (ARDL) and the result of the study indicates a negative and significant relationship among import tariff, corruption and FDI implying that import tariff, corruption posit a negative effect on FDI. However, gross fixed capital formation, law and order, export posit a positive and significant relationship with FDI. Implication for this is that the need to consolidate on the past anti-corruption crusade cannot be underscored. Export oriented policy is a key strategy to drive FDI inflow. SSA needs to invest heavily in home investment so as to create an enabling environment for FDI inflow into SSA.

Keywords: FDI, Import Weighted Tariff Policy, Trade Flows Barrier/Restrictions

JEL Classification: F42

1. Introduction

The experience of FDI flow into Sub Saharan African countries in the 1980s featured a restrictive policy with high restrictions on import specifically (tariff structure) to protect the infant industries (Regional Economic Outlook, 2019). FDI inflow into the Sub-Saharan Africa compared to other regions is low. A stylized fact shows that FDI inflows for the period 1980 and 1989 stood at 2.6% of the world average, it further dropped to 1.9% in the period 1990 to 1999. However, the share rose to about 3.2% in the period 2000 to 2009. Unlike the SSA countries, the Asian countries had received about 14.2 percent, 19.1 percent and 19.1 percent, respectively of the total world FDI inflows (Anyanwu, 2011). In the 1990s, liberalisation regime began with Uruguay Round Agreement, regional trading agreements (RTAs) and trade reforms. Tariff and Non-tariff measures are key issues

affecting FDI inflow which continue to diminish trade among SSA countries. It is in this light that in 2018, member countries classified under African Union designed a strategy to boost regional trade and economic integration thus by establishing the African Continental Free Trade Area (AfCFTA). The agreed terms to eliminate tariffs on most goods, liberalize trade of key services, so also to address nontariff obstacles and bottlenecks to intraregional trade, and at the end establish a continental single market with free movement of labour and capital. However, the AfCFTA framework has been ratified by twenty two (22) countries which likely to take effect in 2019 (Regional Economic Outlook, 2019).

Although there were series of agreement to improve trade flows in the region which consequently expand trade flow at uneven rate, some of these agreements were West African Economic and Monetary Union (WAEMU), Southern African Customs Union (SACU), Central African Economic and Monetary Union (CEMAC) and the East African Cooperation (EAC). Other RTA policies are Economic Community of West African States (ECOWAS), the Economic Community of Central African States (ECCAS), the Southern Africa Development Corporation (SADC), and the East African Community (EAC). These agreements spiked a huge reduction in tariff structure (Regional Economic Outlook, 2019). Despite this RTA, uneven trade flows among countries emerged due to different trade rules that emerged as a result of many Countries being part of different RECs and most importantly time of establishment which further reflects relatively high tariffs on trade flows between countries from different REC. According to Oguma (1998) several factors had affected the regional economic integration in SSA and Africa at large and these stem from trade barriers imposed by some member countries, poor rate of industrial diversification of traded goods, low share of inter-regional trade in the international market, poor complementarity in import and export profiles of trade among member countries.

Several studies have emerged on liberalisation policy but relatively few have efficient measure on the effect of trade policy (see studies by Sachs and Warner 1995; Rodriguez Wacziarg and Welch 2008; Rodrik 1999 and Martens 2009) these authors employed dummy, Black market exchange premium. Cross border activities and forms of restrictions/tariffs are important measures of trade liberalisation. Unfortunately, these studies used trade ratio analysis or trade volume see Serge and Yaoxing (2010); Shaheen *et al.* (2013) and Adhikary (2012). It is in view of this forgoing background that this study seeks to investigate the effect of tariff structure on FDI in SSA countries. This study is structured into five sections including this section. Section two discusses the theoretical framework, section three looks at data and methodology, section four considers data analysis and interpretation and section five looks at conclusion and recommendation.

2. Literature Review

One of the prominent theories on tariff is the tariff jumping theory which argued that when tariff is imposed by the labour abundant country, the return to local investment also increases thus, increasing foreign capital inflow in the country. Consequently, foreign firms will prefer to establish their subsidiary production plants in host countries to cut cost hence this limit FDI (Mundell, 1957).

Bond (1991) presents a general equilibrium model with foreign capital taxation and two goods one of which is imported| for small economy ("small" both in goods and capital

markets). With the importable good being capital-intensive, Bond shows that if the credit mechanism is present in foreign investors' home country, the optimal import tariffs for a small, host economy is positive. With the credit mechanisms present in the capital-exporting country, by taxing foreign capital income, the host country extracts a gain in terms of tax revenue that would otherwise be captured by the home country, thus increasing national income and welfare. As Bond (1991) indicates, by bringing with it tax revenue, foreign capital generates a kind of (positive) fiscal externality in the host country. Therefore, a subsidy on foreign capital is called for, and this can be granted in the form of an import tariff.

Bond (1991) further stressed that for the host to capture all of the tax revenue associated with foreign capital income, its tax rate must be set at a level equal to that in the capital-exporting country. This, however, gives rise to a divergence between direct and social cost of capital, i.e. the gross and the net rate of return, respectively. The latter is indeed the return required by foreign capitalists, which in equilibrium must be the same in the host and home country. Therefore, the optimal policy for the host consists of subsidizing foreign capital at a rate equal to the income tax rate. The theory underpinning this study is the theory by (Mundell, 1957)

Empirical Literature

Bitar, Hamadeh and Khoueiri (2020) investigated the impact of political risk on FDI on Lebanon economy for the period 2008 to 2018 applying the OLS regression technique. The result of the study revealed that political risk variables such as democratic accountability, bureaucracy accountability and law and order have positive effect on FDI. Quality of institution such as corruption has positive effect on FDI.

Zhang and Daly (2011) in a study examined the determinants of FDI in China applying panel data for the period 2003 to 2009, employing the correlation analysis and ordinary least square regression technique. The result of the study shows that exports from China, large GDP per capital and increased GDP growth, open economic regimes and resources-rich countries determines China FDI. In another study, Aqeel and Nishat (2004) in their study investigated the determinants of FDI in Pakistan for the period 1961–2002, applied the Phillips-Perron Unit Root Test, Johansen cointegration test, VAR and Error-correction Model thus and the result of the study shows that tariff and corporate tax has a negative impact on FDI *

On the contrary, Liargovas and Skandalis (2012) in their study employed a sample of 36 developing economies for the period 1990–2008 using data on developing regions of the world: Latin America, Asia, Africa, CIS (Commonwealth of Independent States) and Eastern Europe employing the panel least squares regression. The result of the study indicates that trade openness, political stability, exchange rate stability and market size (as expressed by GDP) have positive influence on FDI.

Similarly, Gastanaga, Jefferery, Nugent and Pashamova (1998) in their study employed panel data covering 49 less developed countries for the period 1970 to 1995 using the pooled OLS and fixed estimation techniques to the effect of reforms on FDI and result indicated a negative relationship between tariff and net FDI implying that tariff jumping seemed to be FDI motive. However, exchange rate has positive effect on FDI.

In a separate study, Majeed and Ahmad (2007) covered sample 49 developing countries over the period 1970 to 2004 to estimate the relationship between FDI and export employing the Three Stage Least Squares method and fixed effects model. Result shows that there is a bi directional causality between export and FDI; there is also a negative relationship between domestic investment and FDI. Shah and Ahmad (2003) in their study examined the determinants of FDI in Pakistan economy, employing the Time-Series data for the period from 1960-61 to 1999-00. The authors applied Johansen-Juselius (1990) test for cointegration employed and Error Correction Model (ECM) and result of the study indicated that tariffs have negative effect on inward FDI.

3. Methodology

This study covered 24 out of 49 Sub Saharan African countries spanning the period 1988 to 2017 due to availability of data inform of non-probability sampling technique.

FDI: This is inflow of investment capital into the country; it is a percentage of GDP (% of GDP). It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP (see World Bank, 2014). **Trade Liberalisation:** trade liberalisation is measured as import weighted tariff. The Weighted mean applied tariff is the average of effectively applied rates weighted by the product import shares corresponding to each partner country (see World Bank, 2014).

Export: The variable export is measured as exports of goods and services as a percentage of gross domestic products (GDP) as indicated in the measure (see World Bank, 2014). Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. **Exchange Rate:** It is measured as an annual average based on monthly averages (local currency units relative to the U.S. dollar) (See World Bank, 2014). **Domestic Investment:** Commonly used proxy for domestic investment is the Gross Fixed Capital Formation. Thus (GFCF) Gross fixed capital formation Gross fixed capital formation (% of GDP) Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings (see World Bank, 2014).

Corruption: this is measured as Corruption Perceptions Index (CPI), which is a composite index or poll of polls, that ranks countries in terms of the degree to which corruption is perceived to exist among public officials and politicians (see World Bank, 2014). **Law and order:** It is measured as quality of law and order. Thus, it is an index which measures the level at which the citizen of a country develop confidence and also abide strictly to the rules governing the society especially on the rules that guide or enforce contract rules, property rights, police and the court of law (see World Bank, 2014).

The model specification for this study is expressed as:

$$FDI = \beta_0 + \beta_1 \text{weightedimporttariff} + \beta_2 \text{Exchrates} + \beta_3 \text{Export} + \beta_4 \text{InstQuality} + \beta_5 \text{Marketsize} + \beta_6 \text{FDI} + \varepsilon_{it} \dots\dots\dots 1$$

Where FDI is the dependent variable, β_0 is the constant or intercept, $\beta_1 \beta_2 \dots \beta_6$ are the slope of the coefficient with respect to independent variables (trade liberalisation, exchange rate institutional quality, export, market size and FDI). ε_{it} is the error term captures unobserved characteristics.

This study employed the autoregressive distributed lag model, it is important to reiterate that one of the essential factor responsible for employing the ARDL model is that series must not be integrated or same order (see Pesaran & Smith, 1995; Pesaran, Shin & Smith 1997). The generalised ARDL (p, q_1, q_2, \dots, q) model is expressed as:

$$y_{it} = \sum_{j=1}^p \delta_j y_{i,t-j} + \sum_{j=0}^q \beta'_{ij} x_{i,t-j} + \Phi + e_{it} \dots \dots \dots 2$$

In this case, y_{it} mean dependent variable (β'_{it}) is a $k \times I$ vector that are allowed to be purely $I(0)$ or $I(1)$ or cointegrated δ_{ij} is the coefficient of lagged dependent variable called scalars; β_{ij} are $k \times I$ coefficient of vectors; Φ is the unit specific fixed effects; $i = 1, 2, \dots, N$; $t = 1, 2, \dots, T$; p, q are optional lagged orders; e_{it} is the error term or white noise.

There parameter ARDL p, q_1, q_2, \dots, q_T error correction model is specified as:

$$\Delta y_{ij} = \theta_i (y_{i,t-1} - \lambda'_i X_{i,t}) + \sum_{j=1}^{p-1} \xi_{ij} \Delta y_{i,t-1} + \sum_{j=0}^{q-1} \beta'_{ij} \Delta X_{i,t-j} + \varphi_i + e_{it} \dots \dots \dots 3$$

Note: $\theta_i = -(1 - \delta_i)$, group specific speed of adjustment coefficient (expected) that ($\theta_i < 0$); $\lambda'_i = \text{vector of long-run relationship}$; $ECT = [Y_{i,t-1} - \lambda'_{i,t}]$, the error correction term; ξ_{ij}, β'_{ij} are the short-run dynamic coefficients.

4. Result

Unit Root Test

Panel series are known to be non-stationary by nature; hence will require the diagnostic test for stationarity to check if stationary or not.

In Table 1, the result of the study indicates that FDI, Corruption and law and order are stationary at level value. This is not surprising as macroeconomic time series are usually non stationary. However, the gross fixed capital formation, tariff, exchange rate, export, GDP are not stationary at level values. Thus, there was need to difference the series as conventionally done i.e. subjecting series to panel ADF and PP Fisher stationarity test procedure. After differencing, the initial panel series that were not stationary at level value were all stationary at first difference and integrated of order one $I(1)$. This study opts for the ARDL approach which conventionally allows for cointegration test when series are stationary of different order i.e. $I(0)$ and $I(1)$ but not of $I(2)$. The xtpmg mean group, pooled mean group and dynamic fixed effect estimation will be employed thus the Hausman sigmamore will allow for selection of most appropriate model (see Blackburne & Frank, 2007).

Table 1: Panel Unit Root Test (In Level)

Variable	ADF Fisher Test	PP-Fisher Test	level of Integation	ADF-Fisher Test	PP-Fisher Test	Diff Level
FDI	-2.9326 (0.0017)	-4.8255 (0.0000)	1(0)	-2.0302 (0.0000)	-13.937 (0.0000)	1(1)
Import	2.1286 (0.9834)	-1.7213 (0.0426)	1(1)	-6.5289 (0.0000)	-14.120 (0.0000)	1(1)
Tariff	0.8597 (0.8056)	0.5349 (0.7036)	1(1)	-5.6982 (0.0000)	-7.0595 (0.0000)	1(1)
Excrate	-2.6027 (.0046)	-1.3144 (0.0944)	1(1)	-4.7135 (0.0000)	-8.3889 (0.0000)	1(1)
GFCF	2.7025 (1.0000)	7.4607 (1.0000)	1(1)	-4.0971 (0.0000)	-4.0811 (0.0000)	1(1)
GDP	-0.7352 (0.2311)	-0.9624 (0.1679)	1(1)	-7.0739 (0.0000)	-10.924 (0.0000)	1(1)
Export	-3.5648 (0.0002)	-3.7595 (0.0001)	1(0)	-6.4073 (0.0000)	-8.2304 (0.0000)	1(1)
Curr	-4.7375 (0.0000)	-12.0965 (0.0000)	1(0)	-4.4252 (0.0000)	-8.4817 (0.0000)	1(1)
Laword						

Source: Authors computation using STATA

Notes: *** ** * denotes 1% 5% 10% statistical significance. Z statistics (in parenthesis).

The pooled mean group is employed to highlight the pooling effect of homogeneity restrictions specifically on long run coefficients so that averages across groups are used to obtain group wide mean estimates of the error correction coefficients and the short run parameters of the model (Pesaran, Shin and Smith 1997).

Table 2: Pooled Mean Regression (PMG)

Variable	Coefficients
Import Tariff	-0.320933*** (-2.21)
GFCF	.047313*** (3.42)
Export	.0258391*** (1.73)
Curr	-.375888*** (-3.50)
Laword	.6622618*** (5.73)

Source: Authors computation nusing STATA

Notes: *** ** * denotes 1% 5% 10% statistical significance. Z statistics (in parenthesis).

Table 2 above shows the long run coefficients under this assumption of pooled mean regression which says that the long run coefficient are the same across all the groups that make up all the panel. The result of pooled mean group regression indicates that in the long run tariff has a negative and statistical significant effect on FDI at 1% level. GFCF has a positive relationship with FDI at 1% level of significance. Export and law and order posit a

positive and statistical significant effect on FDI. However, corruption depicts a negative and statistical significant effect on FDI at 1% level of significance. It is important to note that one basic assumption of the pooled mean group regression is that the error variances and short run coefficient are not the same for each country in the panel. Similarly, the probability p-value at 1% level of significance shows that there is a long run cointegration. However, any deviation from long run equilibrium is corrected at 66% adjustment speed.

The error variance in the long run equilibrium for Burkina Faso is corrected at 14% adjusted speed while there exists a positive short run relationship gross fixed capital formation and FDI. However, for Congo republic, result shows that there is a long run cointegration and any deviation from long equilibrium is corrected at 99% adjusted speed given the 1% level of significance probability p-value. The result further shows a negative relationship between tariff and FDI in the short run at 1% level of significance.

In Cote – Divoire, the result shows a negative and statistical significance between tariff and FDI in the short run, while there also exists a long run cointegration with which any deviation from long run equilibrium will be corrected at 52% level. More so, in Gabon, there isn't any short run relationship but there exist a long run cointegration with any deviation from long run equilibrium connected at 34% adjustment speed. In Gambia, there is no short run relationship among the series. But there exist a long run cointegration and deviation from long run is corrected at 24% adjustment speed. Surprisingly, there is no long run cointegration for Ghana economy, but there exists a short run relationship between tariff and FDI and it is positive and statistically significant. In Guinea Bissau, result shows that there is a long run relationship and any deviation from long run is corrected at 76% adjustment speed. There exist a long run relationship between export, corruption and FDI, implying that export and corruption impact a positive and statistical significant effect on FDI in the short run. On Kenya economy, the result shows existence of long run cointegration, however gross fixed capital formation, export, corruption and law and order posit a positive and statistical significant effect on FDI in the short run while GDP has a negative sign on FDI and statistically significant at 1% level. On Malawi economy, a long run cointegration exists in the panel and any deviation in long run cointegration will be corrected at 65% adjustment speed. Similarly, the result for Malawi economy shows no existence of short run relationship among series.

In Mali economy, there is existence of long run cointegration in the panel any deviation in long run can be corrected at 90% adjustment speed on Malawi economy. Only GDP appears to impact on FDI in the short run thus, the result show that there is a positive and statistical significant effect between GDP and FDI in the short run while tariff, gross fixed capital formation, export corruption and law and order have no relationship with FDI in the short run.

On Mozambique economy, the result depicts the presence of long run with adjustment speed of 20% in case of any deviation in the long run. Furthermore, on GDP and gross fixed capital formation have short run effect on FDI in the panel and the effect is positive and statistically significant at 1% level of significance.

In another development, the result depicts the presence of long run cointegration for Namibia economy with 78% adjustment speed in case any deviation arises. Contrarily, there

is no any short run relationship among series in the panel. For Niger economy, there is no any long run cointegration among series in the panel. However, a positive and statistical significant relationship exists in the short run at 1% level. On Nigerian economy, result depicts the existence of long run cointegration with a corrected deviation term of about 65% adjustment speed in case of any deviation in the long run. Similarly, the result further shows that there exists a positive and statistical significant relationship between gross fixed capital formation, corruption and FDI in the short run at 1% level. GDP has a negative and statistical significant effect on FDI in the short run at 1% level.

For Senegal economy, a long run cointegration exists with a corrected adjustment speed at 90% in case of any deviation in the long run. In the short run, only law and order appears to stimulate FDI in the short run. Law and order impact negatively on FDI in the short run and the effect is statistically significant at 1% level.

In Sudan, there is no any long run cointegration thus; there is no short run relationship among series in the panel. On the contrary, in Togo, results shows the presence of cointegration with an adjustment speed of 82% in case any deviation exist. Furthermore, result for Togo shows that there is no any short run effect among series. On Uganda economy, a long run cointegration exists with a 36% adjustment speed to be corrected in case any deviation emerged. The finding also shows that only GDP has appositve and statistical significant effect on FDI in the short run, while the remaining series in the panel have no short run relationship.

For Zimbabwe economy, the result shows the existence of long run cointegration with a corrected adjustment speed of about 85% in case any deviation occurs. However, the result also indicates that there is no any short run relationship among the series in the panel. For Botswana economy, result depicts along run cointegration with an error variance corrected at 74% in case of any deviation in the long run. Similarly, for short run relationship, there is no any short run effect of series on FDI in the panel. The rationale for selecting the pooled mean group estimation over the mean group estimation is that aside of the fact the mean group provides less information relative to the pooled mean group estimation; the rule of thumb permits the application of Hausman test using Hausman mg pmg, sigmamore. However, the rule say If $P\text{-value} > 0.05$ then run PMG otherwise MG should be estimated (Hausman 1978). This law also applies in selection of either pmg model over dynamic fixed effect estimation. From the analysis, result indicates that the pooled mean group estimation is most appropriate to be used.

In the analysis of panel auto regressive distributed lagged model ARDL, the differenced operator values in the simulation indicates a short run coefficients and coefficients in parenthesis are long run coefficients with error correction term. Employing the Dynamic Fixed Effect Regression, the table illustrate below:

Table 3: Dynamic fixed effect estimation (DFE) DEP VAR FDI

Variabes	coefficients
Import Tariff	-0.0825216*** (-1.73)
GFCF	0.1896417*** (4.74)
Export	0.1206325*** (3.03)
Curr	-0.7478445 *** (-2.09)
Laword	0.6483981** (1.60)
ECT	-0.5521583*** (-15.34)

Source: Authors computation using STATA

Notes: *** ** * denotes 1% 5% 10% statistical significance. Z statistics (in parenthesis).

The result of dynamic fixed effect estimation indicates a negative and statistical significant relationship between tariff and FDI at 1% level. This finding confirms with study by (Aqeel and Nishat 2004; and Gastanaga, Jefferery, Nugent and Pashamova 1998). Gross fixed capital formation and export posits a positive and statistical significant relationship with FDI. The parameter corruption indicates a negative and statistical significant effect on FDI at 1% level of significance.

Table 4 Linear Regression Model

Variabes	Fixed effect	Random effect	GLS
Import Tariff	-.0916348*** (-2.03)	-.1176598*** (-2.79)	-.1630552*** (-4.44)
Excrate	-.0135984*** (-3.06)	-.0084955*** (-2.40)	-.0014833*** (-0.84)
GFCF	.2697046*** (7.23)	.2463343*** (6.84)	.2013211*** (5.98)
GDP	1.06e-13*** (1.93)	4.61** (1.00)	-4.87*** (-1.86)
Export	.1340077*** (4.58)	.1215107*** (4.50)	.0710909*** (4.04)
Curr	-.6014356*** (-1.67)	-.578233** (-1.64)	-.1474428* (-0.46)
Laword	1.301598*** (2.61)	1.215471*** (3.16)	.80181*** (2.37)

Source: Authors computation using STATA

Notes: *** ** * denotes 1% 5% 10% statistical significance. Z statistics (in parenthesis).

This study applied the correlation test to examine the linear dependence among the regressors so as to avoid the problem of Multicollinearity. Hence, the result indicates that regressors are not linearly dependent on one another. From the finding, none of the regressors have a statistic above 0.80 implying that the model does not suffer multicollinearity.

The fixed effect model employed indicates a negative relationship between tariff and FDI as confirmed by findings of Gastanaga, Jefferery, Nugent & Pashamova (1998). Findings also revealed a negative relationship between Exchange rate, corruption and FDI at 1% level of significance. However, gross fixed capital formation, GDP, export, law and order have positive and statistically significant effect on FDI at 1% level of significance. The result for random effect model also depict a negative relationship between tariffs, exchange rate have negative signs indicating a negative and statistical significant relationship with FDI at 1% level. Corruption shows a negative relationship with FDI as well but significant at 5% level of significance. Similarly, GFCF, export and law and order have positive and statistical significant effect on FDI at 1% level but GDP is positive at 5% level of significance. The result of generalised least square regression indicates a negative and statistical significant relationship between tariff, exchange rate, GDP and FDI in SSA countries at 1% level of significance. Similarly, corruption also posits a negative effect relationship on FDI although at 10% level of significance. However, GFCF, export and law and order posit a positive and statistical significant effect on FDI at 1% level of significance.

To select between fixed effect and random effect, the hausman specification test is employed using Hausman fixed simulation. The Null hypothesis states that the random effect model is appropriate while the alternative model state that the fixed effect model is appropriate. Hence, the random effect in this case is most appropriate given the chi-square value 7.13 and the probability p value 0.2115, indicating not significant. Thus this study opts for the random effect model. The test for serial correlation is administered and the result of Pesaran test for serial correlation indicates that there is no serial correlation. The Null hypothesis states that there is no serial correlation while the alternative states that there is no cross sectional dependence in the series given the probability value 1.5150 at more than 5%. The Breusch and Pagan Lagrangian multiplier test for random effects is employed and the result showed that the model does not suffer from heteroscedastic problem given its significant p-value at less than 5% level of significance.

5. Conclusion and Recommendations

The share of FDI in SSA has increased but its share in the global economy is far less compared to Asia. SSA has abundant resources to attract FDI, yet it receives far less compared to other nations due to poor institutions. This study investigates empirically the effect of import tariff policy on FDI in SSA countries. The study covers 24 Sub Saharan African countries spanning the period 1988 to 2017 due to availability of data. The choice of coverage is informed by SAP regime featured in SSA countries within the period, structural economic rigidities, recession and policy reversals. Several studies measured trade volumes (trade ratio) as trade liberalisation hence may not necessarily measure the effect of cross border activities and forms of restrictions/tariffs (see Serge and Yaoxing 2010; Shaheen Kauser and Faqiha 2013 and Adhikary 2012). The study employed the autoregressive distributed lag model ARDL and the result of panel ADF and Phillip Peron test shows that series are stationary at different order of integration. Import tariff and corruption indicates a negative and significant effect on FDI. Gross fixed capital formation law and order and export posit a positive and significant impact on FDI.

The implication for the study is that corruption has negative effect on FDI. There is need to consolidate on the past anti-corruption crusade cannot be understated. The positive

relationship between FDI and export support the export FDI led hypothesis. The implication is export oriented policy is a key strategy to drive FDI inflow. Gross fixed capital formation indicates positive showing that it supports and crowd in FDI into SSA countries. SSA needs to invest heavily in home investment so as to create an enabling environment for FDI inflow into SSA.

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Examining the Impacts of Boko-Haram Conflict and Food Security Status among Households in Kano Metropolis

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Abstract

The extent to which conflict has impacted negatively to food security of households in Kano is of serious concern. The objective of this study is to examine the impacts of Boko-Haram conflict on food security status among households in Kano. Primary data were drawn from a sample size of one hundred (100) household heads from Gwale and Kano municipal areas. The research investigated household food security status by using Food Security Index (FSI) and Binary regression. Result from the FSI divulges that 69% of the households are food secure, with daily per capita energy consumption of 3,086 kcal while binary regression shows that all the variables under conflict have a negative impact on households' food status. Furthermore, food scarcity, market closure and high cost of foodstuff are significant at 10 percent, while unemployment and destruction of property are statistically significant at 1 percent. Households classified as food insecure adopt extremely severe coping strategies, severe coping strategies and less severe coping strategies in some cases. The study recommends that, extremely severe coping strategy to be replaced with the less severe, which can be reversible within a short period. While the study recommended that government should adopt short term and long-term measures in reducing conflict in the study areas, which directly affected the variables under conflict.

Keywords: Boko-haram, Unemployment, Per Capita Energy, Food Security Index

JEL Classification: Q18, Q34

1. Introduction

The number of people galloping into serious food security challenges in the world and Nigeria in particular is increasing by the day. Currently, according to Food and Agricultural Organisation (FAO); International Fund for Agricultural Development (IFAD); United Nations Children Emergency Fund (UNICEF); World Food Programme (WFP) and World Health Organisation (WHO), an estimated 822 million people are suffering from severe hunger in the world (FAO, IFAD, UNICEF, WFP& WHO, 2019). Whereas, in line with the Sustainable development Goals (SDG) indicators, an estimated 2 billion people are expected to be food insecure, including moderately food insecure individuals (FAO et al., 2019). By implication, this means that, for every nine people in the world, at least one is suffering from

a severe food security problem. The figure represents an increased from the previous year projection of 804.6 million (FAO et al., 2018). African continents and Northern America are the worst affected regions in the world, mostly due to continuous conflicts, deteriorated economy and climate condition while Asian continents have witnessed improvement in the number of people suffering from chronic hunger within the period under review (FAO et al., 2019).

Conflict and hunger affected the lives of millions of individuals residing in conflict-affected areas. According to Holleman, Jackson, Sanchez and Vos (2017) majority of the conflict-affected countries identified by FAO are currently in a protracted crisis in term of food, mainly due to conflicts and violence. In the same vein, FAO et al. (2019) stated that over 60% of the estimated 822 million hungry people are found in conflict-affected zones in the world. Household's food security status is influence by conflict in both short term and long term, which subsequently affect wellbeing, individual cognitive improvement and productivity (Arcand, Rodella-Boitreau & Reiger, 2015). According to Martin-Shields and Stojetz (2018) there is a direct negative relationship between agricultural productivity and conflict, which subsequently impacted on food security status of households. According to the United Nation High Commissioner for Refugees [UN-HCR], (2016), over 65.3 million people were affected due to conflicts in the world. As noted by Gleditsch, Wallensteen, Eriksson, Sollenberg and Strand (2002), conflict occurrence is exceptionally high in developing countries of the world. Townsend (1994); Maccini and Yang (2009) observed that in most of the conflict-affected zones, majority of the households and businesses are usually smallholder farmers, characterized by high degree of uncertainty in income, even without conflict, mostly due to climate change. Some of them are product suppliers locally, domestically or globally. These categories of households are always subjected to price oscillations in marketplaces (Adhvaryu, Fenske & Nyshadham, 2016; Adhvaryu, Kala & Nyshadham, 2015; Urdinola, 2010).

Under this scenario, conflict resulted in extra shock that influence the livelihood and wellbeing of the households. The outcome, therefore, presented two issues. First, the class of the shock may be moderately dissimilar across various kinds and intensities across local and national institutions, which could either be transformed or emerge in the course of the conflict (Justino, 2012). Secondly, food security is directly shapes and further interacts with other factors to further compound the food security situation through either price fluctuations or climate weather condition during conflict.

Conflicts in Africa are a normal phenomenon, especially in northern Nigeria where Boko-Haram insurgency is consistently causing serious havoc due to high youth unemployment, scarcity in terms of resources and high rate of poverty especially among the rural households (Ikezue & Ezeah, 2017). This condition has resulted in devastating negative impact on households' food security status especially, in the Northern part of Nigeria where the sect consistently strikes (Mukhtar, 2019c).

Boko-Haram can be traced way back to 2002 from Maiduguri, the state capital of the northeast of Borno under the leadership of the founding father named Mohammed Yusif. Boko-Haram is a new Islamic fundamentalist group found in Nigeria, with small branches in neighbouring countries. Its self-acclaimed name is "Jama'atAhl Us-Sunna li'd-Dawahwa'l

Jihad" which stands for (group for the protection of Sunnah and struggles). However, society and media refer to them as Boko-Haram (Murtala, 2013; Khan & Hamidu, 2015). The group stamped its footprint in 2003 when it openly engaged Nigerian police and various government formations in the country. The group perspective runs contrary to most Muslims in the country (Elden, 2014). According to Forest (2012), the origin of the group was as a result of fallout of country's bad governance, which produces high level of unemployment among the youth as well as extreme poverty and vast inequality. In the same vein, Food Security Information Network [FSIN], (2017) noted that Boko-Haram conflict has resulted in food shocks in the country. Accordingly, spike in the prices of food items was caused by Bok-Haram insurgency and other conflicts in Nigeria in 2018 (FSIN, 2017).

Empirical evidence revealed that there are few studies relating to food security and conflict. According to Taeb (2004), Messer and Cohen (2004) observed that there are no arduous empirical studies relating to conflict with household's food security status in Nigeria. In the same vein, Abbass (2014) and Nchi (2013) noted little empirical studies in conflicts in Nigeria without focusing adequately on the repercussion of food security. Therefore, this study intends to bridge the gap by analysing the impacts of Boko-Haram on households' food security in Kano, Nigeria.

2. Literature Review

Tari, Kibikiwa and Umar (2015) investigated the impacts of Boko-Haram insurgency on the food security status among some designated households in some selected local government areas in Adamawa, Nigeria, using binary regression and food security index. The result revealed that daily average per capita calorie intake among households in the selected local government areas were 1,060 kcal, 1150 kcal, 1,003 kcal and 963 kcal in Mubi North, Maiha, Gombi and Hong respectively. The result further indicated that these selected locations were food insecure. Variables that influence food security status of household include age of the household head, marital status of the household head, household size, household head income and monthly expenditure of the household. Clearly, this research only assessed the impact of socio-economic variables, while neglecting the conflict variables in the study.

Ogbozor (2016) investigated the causes and magnitude of Boko-Haram violent radicalism in Northeast, Nigeria. The research addressed some fundamental questions; what are the socioeconomic causes of the conflict? What are the core causes of conflict and its magnitudes? Result indicated a negative correlation between the conflict and socioeconomic condition; direct or indirect effects were also observed between the conflict and the rural livelihood. Aluko, Osikabor, Adejumo and Sumade (2016) examined the apparent impacts of Boko-Haram conflict from Northeast as a means of accessing cowpea to Bodija market located in Ibadan, Oyo Nigeria. The research expended descriptive analysis, chi-square and Pearson Product Moment Correlation. Result revealed that age, education and marketing proficiency of the household head as well as the source of cowpea from the conflict-affected areas were significantly correlated to the perceived impacts of Boko-Haram conflict. Mukhtar (2019d) investigated the impact of Boko-Haram among households in Kano Municipal, using regression analysis and FSI. Finding showed that all the variables under conflict have negative influence on the food security status of households. FSI further reveals that 31% of the households are food insecure.

3. Methodology

The study used primary data, gathered through well-structured questionnaire which was administered to 100 household heads. A purposive stratified sampling method was used to categories Kano into rural and urban. Out of the eight (8) local government areas (LGAs), under metropolitan, two (2) LGAs were selected, and one hundred (100) regular households drawn for the research. The selection of these two (2) is due to the fact that most of the Boko Haram insurgency was carried out in either metropolitan or Gwale local government areas. While analysing the data descriptively, food security index, in-the context coping strategy index and binary regression were used. Food security index was selected because it is simple and easy to interpret the outcomes and the fact that most of the household heads are considered as low income earners, therefore calculating their food security status will be achieved easily by calculating the calorie intake in each household.

Food security index measures the calorie consumption of household as compared to recommended calorie intake set by FAO. To achieve this index, two stages need to be fulfilled, namely identification and aggregation. In the identification stage, household size will be demarcated into infant (1month-6years); children below the age of 18years and adults above 18years. This demarcation becomes necessary since each of the above individual group have different calorie intake as provided by Stefan and Pramila adult equivalent for adjusting household size in Appendix B (Stefan &Pramila, 1998). For simplicity of the calculation, an average of the adult equivalent for adjusting household was further adopted as used by Mukhtar, Kamaruddin and Applanaidu (2019a) as provided in Table 1.

Table 1: Recommended Daily Energy Intakes and Equivalent Scale

Age category (yrs)	Average energy per day	Factor equivalent
Children less than 6 yrs	813	0.3
Children (6 – 18) yrs	1,897	0.7
Adults (> 18) yrs	2,710	1.0

Source: Mukhtar et al., (2019a).

Therefore, an infant has an average energy requirement of 813 kcal per day with factor equivalent of 0.3, while children between the age of 6and18 years have an average energy requirement of 1,897 kcal. Furthermore, adult will have 2,710 kcal, which represents the recommended average daily energy requirement as provided by FAO in Nigeria (FAO, 2016). Still under identification stage, households consume different kinds of foods, measured in grams (kg) for instance, wheat (3,500 kcal/kg), millet (3,500 kcal/kg), rice (3,660 kcal/kg), cowpea (5,950 kcal/kg) and the rest, also provided by Oguntona and Akinyele (1995). Each of these foods has different calorie content, when the product of the energy content in each food is taken with food measured in kg, we obtain the total energy of each food item called kcal.

On the other hand, the aggregation stage involves the processing of cumulative household calorie consumption into daily per capita consumption in a household. For instance, according to Mukhtar (2019a), households with three (3) infants, three (3) children and two (2) adults, that consume a 1kg of rice, 0.5 kg of millet, 1kg of wheat and 1kg of cowpea,

will have a total calorie energy intake of (3,660+1,750+3,500+5,950 = 14,850 kcal). To also convert the household size and aggregate it into adult equivalent, we take the infants (3*813 = 2,439kcal/2,710kcal =1 adult equivalent); children 6–18 years (3*1,897 kcal = 5,691 kcal/2,710=2 adult equivalent); and adults (2*2710 kcal=5,420 kcal/2,710 = 2 adult equivalent. Thus, the summation of adult equivalent across the group will make a household adult equivalent of (1+2+2 = 5 adults). Therefore, Food Security Index (FSI) is given as follows:

$$\alpha = \frac{\delta_r}{\pi} \dots\dots\dots 1$$

where α represents food security status of households, which could either be food secure if equal to 1 or above, otherwise food insecure less than 1. It is the household per capita calorie or energy consumption and is the per capita recommended energy requirement in a household, which is 2,710 kcal.

Surplus and shortfall ratio is the distance above from the threshold, which is one (1) expressed in term of percentage (surplus index) or below the threshold (shortfall index), also given as follows.

$$(\rho) = \frac{1}{\theta} = \prod_{i=1}^m \vartheta \dots\dots\dots 2$$

$$\vartheta = \frac{\varepsilon - \mu}{\mu} \dots\dots\dots 3$$

Further substituting into Equation (3.2) will provide Equation (4.4) below

$$(\rho) = \frac{1}{\theta} = \prod_{i=1}^m \frac{\varepsilon - \mu}{\mu} \dots\dots\dots 4$$

where (ρ) indicates the number of households either classified as food secure or food insecure, represent per capita calorie surplus or deficiency.

Various studies have adopted FSI in determining household’s food security status in Nigeria; this includes the work of Mukhtar *et al.* (2018b); Fawole and Ozkan (2017); Mukhtar (2019b).

Based on the outcome of food security index, classifying household into food secure and food insecure, a logistic model is estimated to measure the effect of conflict on household food security status. Thus, the explicit model of the estimation is given below:

$$\alpha = \beta \lambda_i + \sigma_i \dots\dots\dots 5$$

In order to assess the effects of Boko-Haram conflict on household food security status, the following variables were used for the analysis. Food Shortage (**Fds σ_1**) – Normally during conflicts, both farming and non farming activities comes to a stand still, farmers that can go to farm to produce, were restricted, in some cases the farmers were forced to migrate out of the farming communities, which generally affected food production. Household perception was measured as binary, 1 represents yes and 0 represents no. The a priori expectation is a negative relationship between food security and food shortage. Market closure (**Mkcls σ_2**) – In most cases during conflict markets are always closed. This is to avoid surprise attack and looting of people’s properties and lives. Household perception was also measured in

binary outcome. The expectation here is also a negative relationship between food security status and market closure.

Security check points (*Schpt σ_3*) – Checkpoints have a lot of implications to food security status of the households. Firstly, in most cases checkpoints have a direct link with high cost of food items, because the security personnel subjected most retailers to exploitation, which eventually was passed to the end user of the products. Motorists spent enormous amount of time on the line, thereby incurring extra cost in terms of extra petroleum, which subsequently is then passed to the end user of products. Sometimes household head prefer to stay in their communities than to face police and military harassment. This results in shortage in the market and scarcity of products. This variable also has a negative relationship with food security and is measured in binary term. Unemployment (*Uempty σ_4*) – Businesses were always affected during conflicts, this resulted in unemployment situation in the conflict-affected areas. The a priori expectation is negative relationship with food security. High cost of foodstuff (*Hcfd σ_5*) – Normally during conflict, cost of foodstuff skyrocketed to the ceiling, especially staple foodstuff. This is as a result of fear for attack by the insurgents. Most businesses that decided to supply foodstuff incurred extra cost in form of security and other logistics before the products arrived at the conflict affected zones. Therefore, these extra costs are always passed on to the final consumer. Destruction of property (*Destpty σ_6*) – Once conflicts breakout, household properties running into millions of Naira/Dollars are either destroyed or snatched by the insurgence. Therefore, destruction during conflicts has a negative relationship with household food security status. The a priori expectation is also negative. Therefore, the empirical model used for the estimation is given as:

$$\alpha = \beta\lambda_0 + Fds\sigma_1 + Mkcls\sigma_2 + Schpt\sigma_3 + Uempty\sigma_4 + Hcfd\sigma_5 + Destpty\sigma_6 + e_i \dots 6$$

In-the Context Coping Strategy Index

According to Food and Nutrition Technical Assistance [FANTA] (2003), coping strategies come into existence when a household is faced with food shortage or uncertainty. The index measures the number of time and severity of coping strategy behaviour in a given household. The index employed a simple question specifically formulated to measure household's repeated consumption pattern and then relates it with strategies respond in assessing food for a given period of time. Basically, there are three types of coping strategy based on severity namely, extremely severe coping strategy, severe coping strategy and less severe coping strategy.

4. Results

Descriptive analysis indicated that 96% of the household heads were married, while 82% were male-headed household heads. Average household head age was 39 years, indicating that most household heads were within their productive age, while average family size among the household was seven (7) members in a household. About 52% of the household size comprised children under the age of 18 years. Majority of the household heads were engaged in public sector job, as against the farming activities. Average monthly expenditure among households was estimated at ₦206,446 (US\$675) with about 48% of the monthly household expenditure within the range of ₦101,000–N200,000 (US\$331–US\$657). Descriptive analysis also revealed that average monthly income among household heads was

₦154,245 (US\$504) with majority of the households within the range of ₦101,000–200,000 (US\$331–US\$657) while average household member's monthly income was N22,430 (US\$73). This outcome of economic profiling is in line with finding of World Bank which stated that majority of the households in Nigeria survive under less than US\$1.25 per day, which indicate high tendency of poor households in the study area due to high poverty rate. Table 2 summarise the household heads socio-economic profiling below.

Table 2: *Socio-economic Profiling of Household Heads*

	%	Average
Gender Status		
Male	82	
Female	18	
Marital Status		
Single	0	
Married	96	
Divorced	1	
Widowed	3	
Age (Yrs)		39
Family Size		7
Monthly Income (N/\$)		
Naira		154,245
Dollar		657
Other Members' Income		
Naira		22,430
Dollar		73
Monthly Expenditure		
Naira		206,446
Dollar		675

Source: Research Survey, 2018

Note: Dollar exchange rate @ CBN rate of US\$1 to N305

Table 3 indicates the status of food security among household in Kano metropolitan. The table reveals that 69% of the households were food secure. However, indication shows that there were more food secured households in Gwale (78%) as compared to Kano municipal with 69%. In the same vein, there are fewer food insecure households in Gwale than in Kano Municipal with 22% and 31% respectively. Total daily energy consumption (TDEC) in Gwale is 600,340.2 kcal, while total daily energy requirement (TDER) by households was 359,888 kcal. Also, there is total adult equivalent (AE) of 132 individuals in Gwale. Therefore, dividing the AE with TDEC and TDER will result in per capita energy consumption (PCEC) of the household and Per Capita Energy Requirement (PCER) of household. By adopting Equation (1), food security status (Z) of households is determined in Table 3. Indication from Table 3 reveals that food security status in Gwale among food-secured households is 1.67 with surplus index of 0.67 or 65%, while shortfall index among food-insecure household is 0.08 or 8% because food security index is 0.92. Surplus and

shortfall index reveal the extent to which households exceed food status threshold, while shortfall shows the extent of households deviation from the threshold.

Table 3 further reveals that TDEC and TDER in Kano Municipal among food-secured households is 367,098kcal and 30,7856kcal respectively, while PCEC and PCER is 3,277.66kcal and 2748.71kcal respectively, this resulted in food security index (Z) among food-secured households as 1.19 thereby resulting in surplus index of 0.19 or 19%. TDEC, TDER, PCEC and PCER for food-insecure households in Kano Municipal are 409,104kcal, 551,214kcal, 2,025.27kcal & 2,728kcal, respectively. After applying Equation (3.1), it will give an index of 0.74 and a shortfall of 0.26 or 26%.

The region overall can be considered food secured because overall food security index is 1.13 clearly above the threshold of 1. By implication, the surplus index among the food secured households upset the shortfall index incurred by the food insecure household, thereby overall making the region food secure.

Table 3: Summary of Food Security Index in Kano Metropolitan

Factors	Gwale (n = 50)			Kano Municipal (n = 50)			Pooled (n = 100)		
	Food Secure	Food Insecure	All	Food Secure	Food Insecure	All	Food Secure	Food Insecure	All
% of HH	78	22		60	40		69	31	100
TDEC	600340.2	201459	801799	367098	207645	574743	967438	409104	1376542
TDER	359888	220052	579940	307856	331162	639018	667744	551214	1218958
PCEC	4548	2487.15	3764.31	3277.66	1716.07	2466.71	3964.91	2025.27	3086.42
PCER	2726.42	2716.69	2722.72	2748.71	2736.88	2742.57	2736.66	2728.78	2733.09
Z	1.67	0.92	1.38	1.19	0.63	0.90	1.45	0.74	1.13
HeadCount	0.78	0.22	1	0.6	0.4	1	69.00	31	1.00
Shortfall (Pi)	0	0.08	0	0	0.37	0.1	0.00	0.26	0.00
Surplus (Ps)	0.67	0	0.38	0.19	0	0	0.45	0	0.13
AE	132	81	213	112	121	233	244.00	202	446.00

Source: Research Survey, 2018.

Where TDEC stands for total daily energy consumption, TDER stands for total daily energy requirement, PCER stands for daily per capita energy consumption for households, PCER stands for daily per capita calorie requirement for the households, Z stands for the household food security status, P_s stands for surplus index, P_i stands for shortage and AE stands for the household adult equivalent.

The moment households are faced with the issues of food security problem, coping strategies set in. The research adopted in context coping strategy. The method identifies various strategies operational in the location. Households were later requested to identify and rank the strategy used during food shortage. Based on the ranking, strategies that were not in existence were then eliminated. The frequency, on the other hand, indicates the number of days that a household has to put up with identified coping strategy in a household.

Table 4 indicates the CSI among the households in Kano Metropolitan. It clearly, means that households under Kano Municipal have the highest CSI of 64 as compared to Gwale with only 42. The index takes the product of severity and frequency in each of the coping strategy adopted by the household to obtain the weighted score. The weighted scores, in turn, is summed up to obtain the CSI from each location. Indication from Table 4.4 revealed that selling assets/livestock and skipping meals represent extreme coping strategy in the location with a pooled percentage of 27% each. It also shows that more households resolved in using these two strategies over others. Severe coping strategies among the households include children eating first, before adult and reducing consumption in a household with 17% and 12% respectively. Other coping strategies considered less severe among households involve borrowing money or purchasing food on credit, depending on assistance from family and friends (5%), eating less preferred food (5%) and removing/relocating children to less expensive school (3%). This finding is in line with Mukhtar (2019c) and Mukhtar et al. (2018c) outcomes.

Table 4: Coping Strategies Adaptation in Kano Metropolitan

Coping Strategy	Gwale			Municipal			Pooled
	Severity	Frequency	Weighted	Severity	Frequency	Weighted	%
Borrowing money/purchase on credit	1	2	2	1	3	3	4
Selling assets/livestock	4	3	12	4	4	16	27
Children eat first before adult	3	3	9	3	3	9	17
Reduce consumption of food	2	3	6	2	3	7	12
Depend on assistances-family & friend	1	2	2	1	3	3	5
Skipping meals	4	2	8	4	5	20	27
Eating less preferred food	1	2	2	1	3	3	5
Remove/relocated to less expenses school	1	1	1	1	2	2	3
Total Scores			42			62	

Source: Research Survey, 2018.

Binary logit was used to analyse the effects of conflict (Boko Haram Insurgency) on household food security status in Kano Metropolitan, as shown in Table 4.. All the variables indicated that food security is negatively affected by conflict. This finding is in line with aprior expectation.

Indication from Table 4 reveals that food scarcity has an inverse and negative impact on the household's food security status. Nwabueze (2016) noted that in most cases during conflicts, especially in rural locations where farming activities were carried out, majority of the farmers, that generally bring in food products to the urban centers were restricted/affected

due to conflicts. In the same vein, Ekong (2003); Adelokun, Adurogbanga and Akinbile (2015) confirmed that food scarcity has a negative effect with food security status of the households. Table 4 further reveals that market closure has a negative consequence with the household's food status. Marama (2015) noted that the market is a soft spot and easy target for most attacks by the insurgency, mostly due to the large number of people and low security. Activities in a market during conflict are affected, households that rely on the market for foodstuff suffer a severe setback, and consequently the situation reduces their food security status (Ofem and Inyang, 2014). Awodola and Oboshi (2015) noted those in most conflict-affected areas, shops and other businesses were crippled down, which also subsequently affected the household's food status. The same argument was observed by Okereocha (2012) that over 80% of business activities in Kano state were crippled due to Boko haram conflict.

Table 4 also indicates that security checkpoint has a negative impact on household's food status, especially in a country like Nigeria that is considered as a developing country where corruption is exceptionally high. The negative implications developed as a result of excessive exploitations by the security personnel, especially on foodstuff and cost of transportation of food items to the conflict-affected area (Mohammed & Ahmed 2015). Also, Oti, Onyia and Umoinyang (2016) observed that the negative impact of security checkpoint and market closure in conflict areas seriously affect household's food security status. Furthermore, Table 4 indicates that unemployment has a negative impact on the food security status of the household. Employment is the source of livelihood of household, and food security is influenced where there is a shortage or no job for the household. Conflicts affect the employment status of the household in two ways. According to Amodio and Di-maio (2014), one, the firm or agricultural activities are affected and closed down, in the same way, the workers or farmers were rendered jobless. Secondly, households were forced to leave (migrate) their communities and sometimes stay in camp.

Table 5: Impacts of Conflict on Food Security Status of the Households

Factor	Coefficient	Strd.Err	z	P> z
Food scarcity	-0.762	0.458	-1.66	0.096*
Market Closure	-0.908	0.494	-1.84	0.066*
Security checkpoints	-0.594	0.482	-1.23	0.218
Unemployment	-1.392	0.536	-2.60	0.009***
High cost of foodstuff	-0.839	0.468	-1.79	0.070
Destruction of property	-1.204	0.300	-4.01	0.003***

Source: Research survey, 2018 *significant @ 10%, ** significant @ 5% and *** significant @ 1%.

Table 5 reveals that high cost of foodstuff has a negative influence on food status of households. O'Grada noted that one of the adverse effects of conflict is rooted in high cost of foodstuff and is considered as a vital factor. Awodola and Oboshi (2015) noted that conflict resulted in a hike in the price of food products 12% - 122%. Haynes (2007), Ojogbo and Egware (2016) linked food shortage during conflict with high cost of foodstuff, which eventually affected the food security status of households. Also, Table 4 reveals that

destruction of property has a negative effect on the food security status of the household. In most cases, households were either forced to pay for protection or their property were vandalized and used by the insurgents (Haruna, 2015).

5. Conclusions and Recommendations

The paper assesses the impact of Boko Haram insurgency on household food security status in Kano Metropolitan, Kano state. Food security index revealed that 69% of the households in Kano Metropolitan were food secure with average food security index of 1.13 and average daily per capita energy consumption of 3,086 kcal, while daily per capita energy requirement of 2,713 kcal. Surplus index also revealed that the region achieved 13%. Finding from binary regression analysis reveals that all the variables were in line with a priori expectation. Unemployment and destruction during conflict are negative and statistically significant at 1 percent, while food scarcity, market closure and high cost of foodstuff indicate a negative coefficient and statistically significant at 10 percent. Finding from coping strategy index revealed that households in Kano Municipal were more food insecure than households in Gwale with an index of 62. Coping strategies adopted by the food insecure households include extremely severe coping strategy, which comprises selling of asset and livestock and skipping meals. Severe coping strategies, on the other hand, consist of children eating first and reducing consumption in the household. And less severe coping strategies comprises borrowing and buying food on credit, depending on assistance to eat, eating less preferred foods and relocation of children and wards to less expensive school. All the variables used in conflict indicated a negative impact with food security status of the households; these variables include food scarcity, market closure, security checkpoints, unemployment, high cost of foodstuff and destruction of property during conflict.

The paper, therefore, recommends that to curtail Boko-Haram conflict, government needs to introduce measures that are short term and long term in nature. The short-term policy includes total crackdown of Boko Haram members through intelligence gathering, enforcing a mandatory curfew and state of emergency in a conflict-affected area, fishing out individuals that fund the organisation publicly. While the culprits judgment should be carried out with speed of light, in the long-term, the security personnel should be equipped with sophisticated and up to date weaponry to aid in facing the insurgency squarely. The government should invite the foreign countries in training the security personal, and lastly, the government should introduce the policy of carrot and stick among the member of the insurgency. All these measures are to curtail the effect of food scarcity, market closure, high cost of foodstuff, unemployment and destruction of lives and properties which directly affect the food security status of households.

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Impact of E-commerce on Customer's satisfaction of Guaranty Trust Bank Plc, Ilorin Kwara State, Nigeria

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Abstract

This paper considered impact of electronic commerce on customers' satisfaction of Guaranty Trust Bank in Ilorin Kwara State. The rationale behind the study is to find out whether electronic commerce, like e-purchase e-transfer brings about customer satisfaction. Assimilation Contrast Theory was used in this study. Survey research method was adopted; questionnaire was employed as instrument to gather data from the selected respondents. Non probability sampling was utilised: convenience sampling was utilised in the data collection procedures. Findings show that student customers of Guaranty Trust Bank Plc Ilorin, Nigeria, are significantly influenced by use of e-commerce, e-purchase, e-transfer etc. The study recommends that management of Guaranty Trust Bank should invest more on e-commerce as it satisfies their customers most especially their student customers and also gives competitive advantage in terms of patronage and customer loyalty which is made possible through e-commerce services of Guaranty Trust Bank Ilorin Kwara State.

Keywords: Electronic Commerce, Customer Satisfaction, Guaranty Trust Bank

JEL Classification: L81, M10

1. Introduction

The Internet population is exploding and it has resulted in the World Wide Web (www) multiplying so rapidly across the globe. More so, the use of the Internet is no longer limited to computer subscribers who use it for fun or curiosity. This has opened up tremendous business opportunities for users and businesses. The Internet began as the ARPANET during the cold war in 1969. It was developed by the U.S. Department of Defence's (DOD) in conjunction with some military contractors and universities to explore the possibility of a communication network that could survive a nuclear attack. It continued simply because the DOD, its contractors, and the universities found that it provided a very convenient way to communicate (Wu Lu, Latif Al-Hakim 2016) (Barua&Whinston 2000). The main purpose of the banking Internet service is to share information on bank account balance, no one owns the Internet, nor is it controlled or regulated by anyone. There is no single governing body, such as the censor board, that regulates the Internet. However, many of the general laws and

legal principles that have developed over the years in other fields, such as computer law, copyright, libel and trademark also apply to the Internet (Zusman & Landis, 2002). It is a truly universal, shared resource (Netscape, 2000).

Driven by more demanding customers and global competition, Banks try to distinguish themselves from others. Commercial Banks search for new ways to increase customer value and achieve competitive advantage. Banking services offer more than just core value to the customers, they also want to add additional value to satisfy them and earn increased patronage through e-commerce. Nigerian banks try to establish strong emotional connections with their task environment. An organisation's task environment consists of those things outside an organisation such as customers, competitors, government agencies, suppliers, labour, firms that are relevant to an organisation's operations. Connecting emotionally with customers requires banks to create a cohesive, authentic and sensory-stimulating total customer experience that resonates, pleases, communicates effectively and differentiates the organisation from the competition (Berry & Carbone 2017).

On the part of the customers, maintaining an emotional connection requires the banks to systematically offer experiences and its offerings from the customers' perspectives. This is important because it is the customers' overall service experiences with banking services it offers that evoke the perception of value that determines the preference. As a result, customer's satisfaction has become a critical issue in the success of every banking system. The development of e-commerce is at an unprecedented rate that permeates all aspects of society. Information technology application in the active area of trade shows, e-commerce through the Internet-based information publishing, online purchases, money transfers, electronic transactions and calculations for a series of means of information transmission and processing of breaking the constraints of time, logistics and other operation have greatly improved. Thus, it has greatly reduced the transaction costs, which not only profoundly changed the traditional way of production and management of existing services and consumption patterns but also had far-reaching implications. E-commerce represents the future direction of development of trade; the market has great potential and a broad development prospect. With the improvement of living standards and accelerating pace of life, consumers' shopping behaviour has changed greatly.

E-commerce represented by the network economy is changing the way people live. Nowadays, more and more consumers are turning to go shopping on the web. Generally, businesses have been accustomed to the traditional way of transacting, but the emergence of a global village has led the major business organisation to adopt I.T infrastructure, which was necessitated because of the dynamic nature of the business environment and the change in behaviour of the customers. Hence e-trading was introduced to give diverse customers across geographical frontier access to the product and service offered by a respective business organisation. Therefore e-commerce has to do with mobile or online trading of goods and services, with the use of the internet, computer, mobile phone and other electronic gadgets that use internet services.

This is done to bring the business closer to the customers. Satisfying this customer becomes important, for the survival of every business organisations depends on their sales turn over through the level of patronage by the customers. Most of the business organisations

triumphing in today's business world use online trading and e-services to their advantage, by taking their business activities online to remain in business, examples of these organisations are, Amazon, Chinavasion, E-bay, Alibaba, Konga, Africa, Jumia, Olx, and many more. It is expected that a higher level of customer's satisfaction leads to greater loyalty. Although, the impact of satisfaction on customer loyalty is rather complex, it is believed that customer's satisfaction accounts for only part of why people change product or service providers.

Today, all banks are seeking information on how to build customer loyalty and customer patronage. Loyal customers not only require more information themselves, but they serve as an information source for other customers. Building customer loyalty is one of the biggest challenges for business today. A customer will only be loyal once he or she is satisfied from the purchase of product or service offered by the business organisation. Therefore, satisfying a customer depends on different factors, because of the fact that customers' preference change and diverse from one customer to another, which is consequential to how a business organisation satisfies its customers (Bitner, Ostrom and Morgan (2007)). This is why the study seeks to investigate the impact of e-commerce on customer's satisfaction, from the perspective of student customers, unlike previous studies that predict the customers as a whole; whereas the heterogeneous nature of customers is diverse and with different sense of satisfaction which makes it difficult to accept a generalised opinion about customer satisfaction. However the broad aim of this study is to examine the impact of e-commerce on customer satisfaction, while the specific objectives are to analyse the extents of e-purchase on customer loyalty and evaluate the effect of e-transfer on customer patronage.

2. Literature Review

Theoretical Review

In a highly competitive business environment like the banking industry in Nigeria, an understanding of assimilation and contrast effects is of substantial interest. The theory was introduced by Anderson (2000) in the context of post-exposure product performance based on Sherif and Hovland's (1961) seminal research which suggest that judgments of objects can be affected by contextual factors (Joan & Brian, 2001). The theory states that if performance is within a customer's latitude (range) of acceptance, even though it may fall short of expectation, the discrepancy will be disregarded, that is, assimilation will operate and the performance will be deemed as acceptable whereas if they fall within the customer's latitude of neutrality, there will be minimal change. On the other hand, if performance falls within the latitude of rejection, contrast will prevail and the difference will be exaggerated and the product or service will be deemed unacceptable (Oxford, 2014).

The theory suggests that satisfaction is a function of the magnitude of the discrepancy between expected and perceived performance. When the expectations and the actual product performance do not match, the consumer will feel some degree of tension. In order to relieve this tension, the consumer will make adjustments either in expectations or in the perception of the product's actual performance. Consumers will tend to assimilate or adjust differences in perceptions about product performance to bring it in line with prior expectations if the discrepancy is relatively small. However, if the discrepancy is relatively high, contrast will occur and consumers will magnify or exaggerate the discrepancy and the product would be

rejected as totally unsatisfactory. Based on this theory, which is a function of difference between expected and perceived performance, this implies that customers can only be loyal if their perception of their purchase meets the required expectation of the services or product, which will also lead to re-order through consistent patronage.

Review of Related Literature

E-commerce refers to the use of communication technology particularly the internet to buy, sell and market products and services to customers. The Internet has brought about a fundamental shift in national economies that are isolated from each other by barriers to cross border trade and investment; isolated by distance, time zones and language; and isolated by national difference in government regulations, culture and business systems (Mohammad, 2004). It involves transfer of funds from one account to another that occurs electronically. An electronic transfer can take various forms, including a transfer made between an individual's various accounts (move from savings to checking), and from one individual's account to a corporation's account for an automatic reoccurring bill payment, or via a credit or debit card swiped at a retail location to pay for a purchase(Griffin, 2002).According to Ojo A. T. (2004)Electronic purchasing (e-purchasing), automates and extends manual buying and selling processes, from the creation of the requisition through to payment of the suppliers. The term e-purchasing encompasses back-office ordering systems, e-market places and supplier websites. Customer's satisfaction has been one of the top tools for a successful business. Customer's satisfaction is defined as an overall evaluation based on the total purchase and consumption experience with the good or service over time (Fornell, Johnson, Anderson, Cha & Bryant 1996). With marketing, customer's satisfaction also comes along with it which means it ascertains the expectation of the customer on how the goods and services are being facilitated by the companies. Actionable information on how to make customers further satisfied is therefore, a crucial outcome (Oliver 1999).

Some authors view e-Business as the evolution of e-commerce from the buying and selling over the Internet, and argue that the former is a subset of the latter (Turban et al., 2006). Others defend that, although related, they are distinct concepts (Laudon & Traver, 2008). Others use both terms interchangeably to mean the same thing (Schneider, 2002).

Kalakota and Robinson (2000) proposed a definition of e-business that clearly stresses the difference between e-commerce and e-business. More precisely they assume that "e-business is not just about e-commerce transactions or about buying and selling over the Web; it is the overall strategy of redefining old business models, with the aid of technology, to maximize customer value and profits". Kalakota and Robinson's definition is of great importance because it describes e-business as an essential business-reengineering factor that can promote company's growth.

According to Melao (2008), the clear commonalities among these definitions, include the improvement of business processes and the use of ICT in intranets, extranets and the Internet to conduct business. He defines e-Business as the use of ICT as an enabler to (re)design, manage, execute, improve and control business processes both within and between organisations.

Thus, front and back-office integration and multi-channel integration become crucial in e-Business, which requires a challenging process improvement approach to support the necessary organisational, technological and social changes.

A Study conducted by Rahmath, Hema and Abdullah (2001) states that, the various areas where the business organisations are preparing to use e-business approach include familiar and relatively mature electronically based products in developing markets, such as, online marketing, shopping mobile trading, credit cards. This means that most of the businesses have recognised the need to change their business process to conform to changing business trends in order to keep up with competition and increase patronage and loyalty.

In a study conducted by Rafiu (2007), he observed that customers are using E-service, to pay utility bills, insurance premium, to book orders online, to book flight tickets, purchasing the products online using net banking or online banking (e-banking), credit cards, debit cards or smartcards, this is made possible through business expansion and investment in information technology by business organisations, similarly, in a study conducted by Windrum, and De Berranger in (2002) focused on the integration of the internet and related ICTs into the business organisation forming e-business. It has two facets. One is the integration of the supply chain so that production and delivery become a seamless process. The other is the creation of new business models based on open systems of communication between customers, suppliers and partners, where the integration of the supply chain provides increased efficiency and significant cost advantages through waste minimization, the development of new products and services are facilitated by new ways of conducting business based on internet working between organisations and individuals, electronic business can be approached in many different ways, depending on the specific business process that might be carried out through the Internet. Thus, several Internet usage profiles or approaches are possible (Al-Qirim, Nabeel, 2005). A company must determine which profile or combination of profiles best suits its particular business context and strategy (Mendo & Fitzgerald, 2005).

Wang, Lin and Tang (2003) claim that in the 1990 e-commerce was under-utilised as business organisations used it only to market their products and services. Thornton and White (2001), examined customer orientations and usage of financial distribution channels in the Australian financial industry, found that more recently most financial institutions, faced with competitive pressure after the introduction of deregulation in 1983, have rethought their strategies to take full advantage of IT. Rafiu (2007) opines that the challenge to expand and maintain market share has influenced many business to invest more in making better use of the Internet. The emergence of e-commerce had made many business organisations rethink their IT strategies in competitive markets. This findings suggest that the business that fail to respond to the emergence of e-commerce in the market are likely to lose customers and that the cost of offering e-commerce services is less than the cost of keeping branch and opening of new outlets. Ayo (2006) investigated the prospects of e-commerce based on ability, motivation and opportunities (AMO) model and observed that virtually all companies have online presence. The study reported the motivation and opportunities for e-commerce as low based on lack of e-Payment infrastructure and access to information and communication technology (ICT) facilities. Chiemeké (2006) conducted an empirical investigation on adoption of e-commerce in Nigeria. The study identified the

major inhibiting factors to Internet, e-commerce adoption in Nigeria such as, insecurity, inadequate operational facilities including telecommunications facilities and electricity supply, and made recommendations on how Nigeria businesses can narrow the digital divide. Also, the report revealed that e-commerce is being offered at the basic level of interactivity with most of the businesses having mainly information sites and providing little Internet transactional services. According to the investigation of Olatidoye (2004), E-commerce is the paperless exchange of business information using Electronic Data Interchange, electronic mail, computer bulletin board, FAX, Electronic Fund Transfer and similar technologies. The information technology industries viewed e-commerce as an electronic business application aimed at commercial transaction. It also means the conduct of business commercial communication and management through electronic data interchange and automated data connection system and according to earlier study, whether companies are doing business over the internet or not, security is a serious issue. Grant(2001), Morri, and Siege (2003) posited that electronic commerce is simply defined as the commercial transaction of services in an electronic format. Electronic Commerce according to Clinton, (2000) is also defined as doing business electronically. It is based on the electronic text, sound and video. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic shares trading, electronic bills of lading, commercial auctions, collaborative design and engineering online sourcing, public procurement, direct consumer marketing and after sales services.

It involves both products (consumer goods, specialized medical equipment) and services (information services, financial and legal services). E-commerce refers to the use of communication technology particularly the internet to buy, sell and market goods and services to customers. The Internet has brought about a fundamental shift in national economies that are isolated from each other by barriers to cross border trade and investment; isolated by distance, time zones and language; and isolated by national difference in government regulations, culture and business systems (Mohammad, 2004). E-Commerce has dramatically reduced location importance. Retailers are now able to sell their products all over the world. This has the potential to increase their revenue and customer base dramatically.

However the work of Stockdale and Standing (2004) stated that the benefits using e-commerce should be visible and substantial so that the companies are encouraged to climb to the ladder from a simple to a more complex stage of e-commerce. Chong (2008) describes e-commerce as a process of integration of all company's processes, activities and services toward buying and selling of products and exchange of information and funds with the company's partners via computer networks and electronic technologies. Rainer and Cegielski (2011) also defined e-commerce as a "process of buying, selling, transferring, or exchanging of products, services, and/or information via computer networks, including the Internet". Schneider (2011) as cited in Diyan, (2012) divided the development of e-commerce into two stages: first wave and second wave. "First wave" of e-commerce was adopted by large enterprises in USA with easy access to capitals, primarily from external sources. Evans and Wurster (1999) refer to e-commerce in this early stage as a "land grab". At once, the whole new marketplace was created and companies who had sufficient

resources and willingness could “grab from the land”. These large companies firstly understood the possibilities that ecommerce can offer and started exploring and developing them. Since most companies were dependent on external investors, achieving the profit was relatively rare. The pressure to the smaller companies was far more intensive, and many of them suffered losses. Kotler (2003) states that there is a general agreement that satisfaction is a personal feelings of pleasure or disappointment resulting from comparing a product perceived performance (or outcome) in relation to his or her expectations. During the last four decades, satisfaction has been considered as one of the most important theoretical as well as practical issues for most marketers and customer researchers (Jamal, 2004). Nerges, et al (2014), conducted a research on the impact of service innovation on customer’s satisfaction using Tehran based Parsian Banks account owners. The result showed that concerning different aspects of modern services, customer’s interaction with institute is most effective element on customers satisfaction, followed by the provision of new services and delivery system. They added that regarding new services, development of new services caused the highest effect on quality of services followed by customer’s interaction with institute and delivery system. Moreover the result from their analysis demonstrated that all aspect of service quality contributed in customer satisfaction. Findings in the work of Bitner, Ostrom and Morgan (2007), revealed that there is a relationship between electronic service innovation and customer satisfaction. They carried out their research on Aramark Parks and Resorts. The result from their finding shows that service quality improvements and innovating new services increase customer’s satisfaction and increase repeat customers.

3. Methodology

The study employed a quantitative procedure to investigate the impacts of electronic commerce on customer’s satisfaction on Guaranty Trust Bank student customers in Ilorin Kwara State, Nigeria. Descriptive statistics such as frequency distributions and percentages were adopted to analyse the demographic responses collected. It was also used to determine the mean and standard deviation of the variables. The inferential statistics was then utilized to measure the relationship between electronic commerce on customer’s satisfaction of guaranty trust bank Kwara state, Nigeria.

Table 1: Response Rate of the Questionnaires

Response	Frequency	Percentage (%)
No. of Questionnaires	200	100
Questionnaires returned	178	89
Questionnaires not returned	22	11
Questionnaires Valid	164	82
Questionnaires not Valid (Due to outliers, double ticking and incomplete)	14	7
Valid response rate		82%

Source: Authors' Field Survey (2019)

4. Result

Table 2 Descriptive result

Items	Frequency	Percentage (%)
<i>Gender</i>		
Male	98	59.8
Female	66	40.2
<i>Age</i>		
20yrs and below	29	17.7
21 – 25yrs	65	39.6
26 – 30yrs	69	42.1
31yrs and Above	1	0.6
<i>Institution Type</i>		
College	35	21.3
Polytechnic	43	26.2
Mono-technic	1	0.6
University	85	51.8
<i>Student Status</i>		
Pre-graduate studies	2	1.2
Undergraduate	156	95.1
Postgraduate	6	14.5
<i>Current Level</i>		
100 level	6	3.7
200 level	42	25.6
300 level	39	23.8
400 level	45	27.4
500 level	31	18.9
Above 500 level	1	0.6
Total	164	100%

Source: Authors' Field Survey (2019)

Out of the 164 valid responses used in this study, 98 (59.8%) of them are males while the remaining 66 (40.2%) are females. Also respondents' ages revealed in the descriptive analysis that, 29 (17.7%) of the respondents are below the age of 20 years, 65 (39.6%) are between 21-25 years of age, 69 of the respondents representing 42.1% are in the age of brackets 26-30 years. And 1 of the respondents representing 0.6% is above 31 years of age. Similarly, respondents institutions indicate, 35 (21.3%) of the respondents are college students; 43 (26.2%) are polytechnic students, while 1 respondent representing 0.6% of respondent is a mono-technic student. University had 85 (51.8%) of the Respondents. Also respondents by student status reveals that, 2 (1.2%) are pre graduate students. 156 (95.1%) are undergraduates, while only 6 (14.5%) are postgraduate students. Response rate by current level indicates that, 6 (14.5%) respondents are 100 level students, 42 (25.6%) respondents 200 level students, 39 (23.8%) respondents are 300 level students, 39 (23.8%) respondents are 400 level students, 31(18.9%) respondents are 500 level students, while 1(0.6%) respondents is above 500level.

Table 3: Mean and Standard Deviation of Variables

Variabes	N	Min	Max	Mean	Std. Dev.
E_transfer	164	1	5	3.031	.348
E_Purchase	164	1	5	2.823	.906
Patronage	164	1	5	3.057	1.503
Customer_Loyalty	164	1	5	2.910	.779

Source: Research Survey 2019

Multicollinearity Test

Multicollinearity is a situation where two or more exogenous latent constructs become highly correlated.

Table 4: Shows the VIF values and tolerance values for the exogenous latent constructs.

Variabes	Tolerance	VIF
E-transfer	.897	1.115
E-purchase	.383	1.935

Source: Research Survey 2019

Table 4 indicates that multicollinearity did not exist among the exogenous latent constructs as all VIF values were less than 5 and tolerance values exceeded .20 as suggested by Hair *et al.* (2011). There, multicollinearity is not an issue in the present study.

Regression Analysis and Hypotheses Testing between E-transfer and Customer patronage

Multiple regression analysis was conducted in determining the relationship between E-purchase and Customer patronage

Table 5: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.821 ^a	0.674	0.672	0.86084	1.933

Note: a. Predictors: (Constant), E-transfer; b. Dependent Variable: Patronage

The model summary as indicated in table 4.12 above shows that R Square is 0.67; this implies that 67% of variation in the dependent variable (e-transfer) was explained by the constant variables (customer patronage) while the remaining 33% is due to other variables that are not included in the model. This means that the regression (model formulated) is useful for making predictions.

Table 6: ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	248.253	1	248.253	335.006	0.000 ^b
Residual	120.048	162	0.741		
Total	368.301	163			

Note: a. Dependent Variable: Patronage; b. Predictors: (Constant), E-transfer

Table 6 above summarised the results of an analysis of variation in the dependent variable with large value of regression sum of squares (248.253) in comparison to the residual sum of squares with value of 120.048 (this value indicated that the model does not fail to explain

a lot of the variation in the dependent variables. However, the estimated F-value (335.006) as given in the table above with significance value of 0.000; which is less than p-value of 0.05 ($p < 0.05$) which means that the explanatory variable elements as a whole can jointly influence change in the dependent customer patronage).

Table 7: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	0.787	0.221		3.569	0.000
E-transfer	1.362	0.074	0.821	18.303	0.000

Source: Research Survey 2019

The dependent variable as shown in the table 7 explains the influence of e-transfer on customer patronage. This was used as a yardstick to examine the influence between the two variables. According to the result in the table 7, e-transfer-test coefficient is 18.303 and the P-value is 0.000 which is less than 0.05 (i.e. $P < 0.05$). The overall summary of this regression outcome in relations to the coefficient of e-transfer have significant influence on customer patronage. This implies that the null hypothesis was rejected while (i.e., e-transfer significant influence on customer patronage). Therefore, hypothesis H_1 is supported.

Regression Analysis and Hypotheses Testing between E-purchase and Customer Loyalty

Multiple regression analysis was conducted in determining the relationship between E-purchase and Customer Loyalty

Table 8: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.903 ^a	0.815	0.814	0.33648	1.841

Note: a. Predictors: (Constant), E-Purchase; b. Dependent Variable: Customer-Loyalty

The model summary as indicated in table 8 shows that R Square is 0.82; this implies that 82% of variation in the dependent variable (e-purchase) was explained by the constant variables (customer loyalty) while the remaining 18% is due to other variables that are not included in the model. This means that the regression (model formulated) is useful for making predictions.

Table 9: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	80.643	1	80.643	712.272	0.000 ^b
	Residual	18.342	162	0.113		
	Total	98.984	163			

Note: a. Dependent Variable: Customer-Loyalty; b. Predictors: (Constant), E-Purchase

Table 9 summarised the results of an analysis of variation in the dependent variable with large value of regression sum of squares (80.643) in comparison to the residual sum of squares with value of 18.342 (this value indicated that the model does not fail to explain a lot of the variation in the dependent variables. However, the estimated F-value (712.272) as given in table 9 above has significance value of 0.000, which is less than p-value of 0.05

($p < 0.05$) which means that the explanatory variable elements as a whole can jointly influence change in the dependent customer loyalty).

Table 10: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.719	0.086		8.336	0.000
	E-Purchase	0.776	0.029	0.903	26.688	0.000

Note: a. Dependent Variable: Customer-Loyalty

The dependent variable as shown in the table 10 explains the influence of e-purchase on customer patronage. This was used as a yardstick to examine the influence between the two variables. According to the result in the table e-purchase t-test coefficient is 26.688 and the P-value is 0.000 which is less than 0.05 (i.e. $P < 0.05$). The overall summary of this regression outcome in relations to the coefficient of e-purchase have significant influence on customer patronage. This implies that the null hypothesis is rejected while (i.e., e-purchase significant influence on customer loyalty). Therefore, hypothesis H_2 is supported.

Discussion of findings

As explained in the analytical findings, the e-transfer and e-purchase possess the potentials to predict the customer's satisfaction among GTBank student customers in Ilorin Kwara State Nigeria. The discussion mainly focuses on the research questions stated in the objective of this study. There were two hypotheses formulated to test the direct effect e-commerce. The hypotheses and summary of the findings are presented in Table 12

Table 12 Summary of Hypotheses Testing

Hyp.	Relationship	T – value	P -value	Decision
H_1	E-transfer -> Patronage	18.303	0.000	Supported
H_2	E-purchase -> Customer Loyalty	26.688	0.000	Supported

Source: Research Survey 2019

The result indicates that the e-transfer variable is found to predict customer patronage with the following figures ($t = 18.303$, $p = < .000$), hence, the Hypothesis H_1 is supported.

As such, the result indicates that the e-transfer significantly influence customer patronage among GTBank student customer's in Ilorin, Kwara State which is in line with the stated theory explaining the impact of E-transfer on customer satisfaction. Also, the result in H_2 indicates that e-purchase variable is found to predict customer loyalty with the following figures ($t = 26.688$, $p = < .000$), hence, the Hypothesis H_2 is also supported. As such the result indicates that the e-purchase significantly influence customer loyalty among GTBank student customer's in Ilorin, Kwara state which is in line with the stated theory that explaining the impact of E-purchase on customer loyalty.

5. Conclusion and Recommendations

This study provides an improved explanation on the nexus between electronic commerce and customers' satisfaction utilising results of the empirical findings from literature, which are in tandem to the research objectives in relations to electronic commerce and customer's satisfaction. This indicates that there is an established connection between electronic commerce and users, i.e, the organisation and the customers. The research objective of

electronic commerce and customer's satisfaction provides that there is strong significant relationship between Electronic commerce (e.g. E-purchases, e-transfer) and customers' satisfaction in Nigeria banking industry; this makes the customers to be loyal. Similarly, in hypothesis (H₂), the alternative route presented a better explanation that there is a significant relationship between E-transfer and Customer patronage in Nigeria banking industry, through the utilisation of electronic commerce. The alternative route supported that both factors considered in Electronic Commerce like E-purchases and E-transfer and factors considered in Customer's satisfaction (e.g. Customer Loyalty, Customer Patronage) adequately and equally contributed to E-commerce outcomes. Therefore, research objective one and two of this study were supported.

Finally, the proponent of assimilation-contrast theory viewed that customer's satisfaction can be achieved by meeting the expectation of the customers in products and service performance, and this can be done through E-commerce platforms. Investments in e-commerce will improved the awareness, experience, attitudes, of customers towards business organisations and give the organisation competitive edge. However, this study found that the objectives of E-commerce were reached through investment in information and communication technology and the adoption of management information system in organisation Therefore this study, recommended that organisation should adopt the use of information technology to gain more competitive advantage and improve overall customer's satisfaction.

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Measuring Household Food Security based on Expenditure Surveys: Empirical Evidence from Gombe State, Nigeria.

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Abstract

Food security is one of the targets of the Millennium Development Goals (MDGs) and it is widely considered a useful measure for evaluating the progress of a country in terms of wellbeing. Despite various concern by governments all over the world on ensuring that every household can at least provide three square meals per day, food insecurity continues to be a major development problem across the globe, undermining people's health, productivity, and often their very survival. Worldwide, approximately 840 million people are undernourished or chronically food insecure, and as many as 2.8 million children and 300,000 women die needlessly every year because of malnutrition in developing countries. Evidence suggests that Nigerians food production is increasing at less than 2.0% while population growth rate is estimated to be 2.5% per annum. The suggested theoretical disparity indicates that low rate of food production and high rate of population growth will generate high rate of food demand, thereby causing food Demand-Supply gap which can give rise to food insecurity. Thus, the study analysed household food security in Gombe State Nigeria using household expenditure and consumption surveys containing objective (quantitative) data. A total of 400 households were selected using multi-stage sampling and simple descriptive statistics and multivariate regression (probit model) were used. The study revealed that on average, less than 50 percent of the households could afford to consume the minimum dietary requirement of 2400kcal. Furthermore, the findings also showed that at least 27 percent of the household live below one Dollar (1\$), 54 percent are fairly living on a dollar while only 19 percent live above one dollar. A number of factors such as assets, income, and occupation level of education indicators are correlated with perceptions of greater food adequacy.

Keywords: Food Security, Households, Expenditure, Consumption, Productivity

JEL Classification: Q18, H31, D12, C31

1. Introduction

Nigeria is one of the largest economies in Africa, but it is also a fragile economy confronted by internal conflicts, threatened by climate change, and thus experiencing serious food insecurity with a large population at risk of famine and hunger (Julie & Emmy, 2019). Food security is one of the targets of the Millennium Development Goals and is widely considered a useful measure for evaluating the progress of a country in terms of wellbeing

(Vasco, 2007). Despite, various concern by governments all over the world on ensuring that every household can at least provide three square meals for their family, food insecurity continues to be a major developmental problem across the globe, undermining people's health, productivity, and often their very survival (Smith & Subandoro, 2007). Global hunger is severe, as nearly 30 per cent of the world's population is currently suffering from one or other forms of malnutrition, including inadequate caloric consumption, protein deficiency, poor dietary quality, and inadequate concentrations of protein and micronutrients (Basudeb, Acharya. & Davis, 2007). Worldwide, approximately 840 million people are undernourished or chronically food insecure, and as many as 2.8 million children and 300,000 women die needlessly every year because of malnutrition in developing countries (Basudeb *et al.*, 2007).

The situation is particularly worrying in Sub-Saharan Africa and South Asia. For instance there is a high level of malnutrition among children in rural Nigeria and the figures differ with geopolitical zones, with about 56 percent reported in a rural area of South West and 84.3 percent in three rural communities in the northern part of Nigeria (Isaac, 2009). However, these distributions differ across States in Nigeria. For instance Gombe State has prevalence rate of 8.1% severely malnourished children, and the continuing degree of malnutrition with stunting affecting 41 per cent of the children under five; 14 per cent are wasted, 23 per cent are under weight, 13.7 per cent of new born are born with birth weight below 2500 grams (UNICEF, 2018). This outcome along with high level of poverty and falling output of agriculture suggest that hunger has a direct effect on poverty and good nutrition which is an investment in human capital that raises output as well as the returns on investments in education and health care. While lack of sustained economic growth is an important determinant of hunger, the persistence of hunger also feeds back to limit economic growth.

Basudeb, Brinda and Meenakshi (2007), provide empirical evidences which point to the negative impact of hunger and malnutrition on labour productivity, health, and education, which ultimately leads to lower levels of overall economic growth. Hunger is thus as much a cause as an effect of poverty. These studies suggest that hunger has a direct effect on poverty and good nutrition is an investment in human capital that raises output as well as returns on investments in education and health care. Taken together, these findings provide powerful evidence that public spending in reducing hunger is an investment with high returns and should constitute a top priority for developing countries.

Usually, a dichotomy exists between quantitative methods and qualitative techniques for the measurement of poverty and food insecurity. However, recently, focused has been on the quantitative approach- measuring food security using household expenditures. To that effect, an increasing number of quantitative surveys now collect data on household expenditures to analyses the extent of food security. Even though much research works have been done on this alternative indicators in underdeveloped countries and Nigeria in particular, relatively less progress has been made in terms quantitative measures of food security that use representative household surveys.

Most examples of validation are contained in the literature, as can be found in Babatunde, Omotesho and Sholotan (2007), Ayantoye, Yusuf, Omonona and Amao (2011), Simeon

Nanama and Karim Soul (2007), Omotesho et al (2006), Fakayode, Rahji, Oni and Adeyemi (2009), Omonona, Titus and Adetokunbo (2007) and Omotesho and Muhammad (2010). Babatunde, Omotesho and Sholotan (2007), employed calorie-intake approach and investigated the socio-economic characteristics and determinants of the food security status of rural farming households in Kwara State of Nigeria. Ayantoye, Yusuf, Omonona and Amao (2011) adopted the food energy intake used by Greer and Thorbecke (1986).

More so, Simeon Nanama and Karim Soul (2007) used Africare's measurement, Month of Adequate Household Food Provisioning (MAHFP). The FANTA/Cornell questionnaire consisted of 11 simple questions that assessed if and how households experience food insecurity and the strategies they adopt to combat it. Omotesho et al (2006) provide empirical evidence of food insecurity among rural households in Kwara State Nigeria; the study constructed food security index using daily per capita calorie consumption. Fakayode, Rahji, Oni and Adeyemi (2009), employed the basic food module developed by United State Department of Agriculture; Omonona, Titus and Adetokunbo (2007), constructed food security index and Omotesho and Muhammad (2010), Employed food Security index and the Linear Goal Programming (LGP) Model.

From the above, what is missing in particular is study that focuses on the measures of food security at household level with particular emphasis on expenditures. Against that backdrop, the paper analysed household food security in Nigeria using household expenditure surveys (i.e. expenditures on basic food items consumed by households), and also conducted an empirical analysis of their food security status as well as their consumption pattern. The paper is organised as follows. The next section reviews the concept of food security; section three briefly describes the methodology & datasets. Section four presents the model of the study while section five presents the empirical results. The final section provides a discussion of the results and concludes.

2. The Concept of Food Security

The most widely used definition of food security is that given by FAO (1992), as a state of affairs where all people at all times have access to safe and nutritious food to maintain a health and active life. Food security as a concept is mostly broken down into four different components i.e. availability, access, utilisation, and vulnerability; each capturing different, but overlapping, dimensions of the phenomenon (Mauro et al, 2007). Food availability is when sufficient quantities of food are consistently available to all individuals within a country. Such food can be supplied through household production, other domestic output, commercial imports or food assistance. Secondly, Food access is ensured when households and all individuals within them have adequate resources to obtain appropriate foods for a nutritious diet. Access depends upon income available to the household, on the distribution of income within the household and on the price of food. For persons living in urban areas, food access hinges primarily on the household's ability to purchase food. Most urban poor neither have large food stores, nor do they have access to areas for own food production. The urban poor often pay more for food purchases than do wealthier urban counterparts, as they are obliged to buy small quantities of food daily because they do not have the resources or living conditions which permit them to purchase and store large quantities of food at home. Food utilisation is the proper biological use of food, requiring a diet providing

sufficient energy and essential nutrients, potable water, and Illness and disease can lead to loss of appetite and poor absorption of the nutrients ingested.

Child caring practices are another important component of food security for children as they are reliant on parents and other caretakers to provide safe and nutritious food of adequate quantity and quality. Environmental contamination is a large factor contributing to poor food utilisation. The safety of food in the urban environment is a subject of concern. Street foods are often prepared under unhygienic conditions, and can contribute to outbreaks of food-borne illness. The health status of any group will be influenced by access to services, including primary health care and education, as well as potable water, sanitation systems and general environmental conditions. Another concept is increasingly becoming accepted namely, "Vulnerability" (the risks that can disrupt anyone of the first three factors). There are therefore, four major elements of food security. They are food availability, food access, food utilisation and not losing such access. Availability, access and utilisation are hierarchical in nature. Food availability is necessary but not sufficient for food accessibility and access is necessary but not sufficient for utilisation. In a larger sense, two broad groups of factors determine food security. These are supply side factors and demand side factors. The supply-side factors are those that determine food supply of food availability. In other words, they are determinants of physical access to food at national, household and intra-household levels. The demand side factors on the other hand are factors that determine the degree of access of countries, households and individuals to available food. They are, in other words, determinants of economic access to food or determinants of entitlement to available food.

3. Methodology

The study was conducted in Gombe State, Nigeria. The State is located between latitude 9°30' and 12°30' and longitudes 8°45' and 11°45'E of the Greenwich Meridian. It lies within the Northeast region of Nigeria and occupies a total land area of about 18,768 Km² and a density of 125.4/km² (324.7/sq. mi). The State has eleven Local Government Areas. They are: Akko, Balanga, Billiri, Dukku, Funakaye, Gombe, Kaltungo, Kwami, Nafada, Shongom and Yamaltu/Deba. It has 3 Senatorial districts and 6 Federal constituencies. The State had, by 2019, an estimated population of 3,472,223 people and populated mainly by Fulani people. Other tribes include Hausa, Tangale, Waja, Cham, Bolewa, Tera, Kare-Kare and other minor tribes. Farming is the major economic activity of people of Gombe State. The State also has an estimated total GDP (PPP) of \$2.50 billion, and a percapita income of \$ 1,036.

A cross-sectional data set was generated from the State using questionnaire instrument. Following Israel (2009), given the total population size of 3,472,223 and precision level of 0.05 (5%), the sample size was determined:

$$n = \frac{N}{1 + N(e)^2} = \frac{3,472,223}{1 + 3,472,223^2} \Rightarrow n \approx 400$$

Therefore, a total of 400 households were selected through multi-stage sampling procedure from the State. At first stage, three (3) Local Governments were purposively selected, (one from each of the Senatorial Districts in the State). They are Dukku Local Government Area, Akko Local Government Area and Balanga Local Government Area. This is because of

varied cultural, religious and farming practices among the regions. Then ten (10) geopolitical wards from these Local Government Areas were selected. They include Waziri South, Zange, Jamari Wurotale, Tukulma, Pindiga, Tumu, Kalshingi, Talasse/Gelengu, Bambam and Kindiyo. Thirdly, forty (40) households from each of the ten wards were randomly selected. Hence, these households were interviewed with the aid of written structured questionnaire.

Model Specification

To examine the relationship across the determinants of food security, the study used multivariate regressions and determined socioeconomic variables that are correlated with perceptions of subjective food adequacy. The study modeled the relation as a Probit, because the dependent variable is binary and shows whether a household is food secure or not. Thus:

$$P(y=1|x) = G(\beta_0 + \beta_1 X_1 + \dots + \beta_n X_n) = G(\beta_0 + X\beta) \dots\dots\dots 2$$

Where *G* is a function taking on values strictly between zero and one: $0 < G(z) < 1$, for all real numbers *z*. This ensures that the estimated response probabilities are strictly between zero and one. Therefore, food secured household is 1 and food insecure household is 0

- Y = Indicates food security status of household
- X = Is a vector of household characteristics
- P = Is the probability distribution function of the standard normal distribution

In the model, *G* is the standard normal cumulative distribution function (cdf), which is expressed as an integral:

$$G(z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^z e^{-z^2/2} dz \dots\dots\dots 3$$

The choice of *G* ensures that (equation 1) is strictly between zero and one for all values of the parameters. Therefore, a positive coefficient of a given explanatory variable can be interpreted as being associated with a higher probability of food adequacy. Thus,

$$\text{Food security} = f(\text{ageh, hhsz, occu, relg, educ, geog, gend, asst, inco}) \dots\dots\dots 4$$

More formally, the full model would be expressed as

$$CAQ = \alpha + \beta_1 \text{ageh} + \beta_2 \text{hhsz} + \beta_3 \text{occp} + \beta_4 \text{reli} + \beta_5 \text{educ} + \beta_6 \text{geog} + \beta_7 \text{gend} + \beta_8 \text{asst} + \beta_9 \text{inco} + \epsilon \dots\dots\dots 5$$

Where:

- CAQ = food consumption adequacy;
- ageh = refers to the age of the household head
- hhsz = refers to the size of the household
- occp = refers to occupation of the household head,
- reli = refers to the religion of the head of the household;
- educ = refers to educational qualification of the household head;
- geog = refers to a geographical location of the household
- gend = refers to sex of the household head;
- asst = refers to a household asset, including both agricultural and nonagricultural

incm = $\frac{\text{assets}}{\text{refers to the income of the household.}}$

4. Results

Descriptive Statistics of the Respondents

The simple descriptive analysis presented in table 1 suggests that a small percentage of households are headed by females- 10 percent; thus large proportion of households is headed by males 90 percent. And these females are widowed. Also, the percentage of households living in rural areas is higher than urban areas, with 70 percent and 30 percent, respectively. In terms of their economic activities; farming constitutes the largest workforce with 63 percent, while civil service and trading constitute 27 percent and 10 percent respectively. As far as their ages are concerned, it was found that 62 percent are within the working class, thus only 38 percent are 60 years and above (aged). The decomposition also showed that over 70 percent of the household have large families. The finding of lower income in the households-47percent, sit well with the finding of farming in rural areas, the middle income earners account for 34 percent, while only 19 percent are fairly high income earners. In terms other income generating assets, farmlands account for 35 percent, shops/housing 15 percent, animals 20 percent and others 20 percent.

Table 1: Socio-Economic Characteristics of the Households Heads (HH)

Variable	Frequencies	Percentage	Cumulative Percentage
<i>Gender</i>			
Male	358	90	90
Female	42	10	100
<i>Occupation</i>			
Civil Servant	109	27	27
Farming	129	63	90
Trading/Commerce	40	10	100
<i>Level of Education</i>			
Primary Certificate	169	42	42
Senior School Certificate	129	32	74
NCE/Diploma	68	17	91
Degree/HND	24	6	97
M.Sc./PhD	10	3	100
<i>Religion</i>			
Islam	283	71	71
Christianity	92	23	94
Others	25	6	100
<i>Number of Children</i>			
1 – 7	117	29	29
8 & above	283	71	100
<i>Location</i>			
Rural	280	70	70
Urban	120	30	100

Variable	Frequencies	Percentage	Cumulative Percentage
<i>Age (years)</i>			
18 – 45	161	40	40
46 – 60	88	22	62
60 and above	151	38	100
<i>Monthly Income</i>			
₦20000 - ₦25000	186	47	47
₦25001- ₦30000	136	34	81
₦30001 and above	78	19	100
<i>Assets</i>			
Farmlands	140	35	35
Shops/Houses	61	15	50
Animals	119	30	80
Others	80	20	100

Source: Authors' Computation.

Per Kilocalorie Food Security Analysis

Table 2 contains the food expenditure and intake converted into kilocalories and monetary units.

Based on households' food expenditure and consumption in table 2; Food Security (FS) is assigned to each household, (for the sake of simplicity, we used the sample of small household, i.e. $n = 7$) this assignment is done as follows. In the case of own production, 47 percent of the households acquire an average of 50kilograms of different foods in a month. This is equivalent to an average of 200000kcal per month. Thus the daily consumption for a household would be obtained as $(200000 \div 30) = 6667$ kilocalories/household. Thus, the daily household percapita food consumption would be $6667 \div 7 = 952$ kcal. For the other 36 percent, the daily percapita food consumption is 2392kcal However, the remaining 17 percent has a daily percapita food consumption of 3342kcal. Similar results would be obtained in the case of quantities bought. Thus 23percent of the households have a daily percapita food consumption of 47kcal. Also, 64percent of the households have a daily percapita food consumption of 1010kcal. Then 13 percent of the households have a daily percapita food consumption of 2390kcal. Thus, 87 percent of the households supplement not more than 1010kcal from the market.

For the quantities received from other people, 44% of the households have a daily percapita calorie consumption of 60kcal, 8% have a daily percapita calorie consumption of 152kcal, 9% have a daily percapita calorie consumption of 248kcal and 29% do not receive any kind of food from other people or governments. Based on these results, we found that on average less than 50% of the households could afford to consume the minimum dietary requirement of 2400kcal. Hence, more than 50% of the households are food insecure in terms of percapita calorie consumption. However, if we relax the assumption of small household size, and carry out the analysis on a large family size the situation of food insecurity has a well-established tendency of appreciating.

Table 2: Food Expenditure/Intake breakdown

Variables	Freq.	Percent	*C.f.	Mean Food Expenditure/Intake
<i>Eaten from own production</i>				
0-100kg	186	47	47	200000kcal
101-150kg	145	36	83	502500kcal
151kgandabove	69	17	100	702000kcal
<i>Money spent if bought it</i>				
₦15000-₦20000	94	24	24	₦17500
₦20001-₦25000	233	58	82	₦22500
₦25001andabove	73	18	100	₦27500
<i>Quantities bought</i>				
0-5kg		23	23	10000kcal
6-100kg		64	87	212000kcal
101kgandabove		13	100	502000kcal
<i>Money Spent</i>				
₦5000-₦10000		30	30	₦7500
₦10001-₦15000		50	80	₦12500
₦15001 and above		20	100	₦17500
<i>Quantities received from other people</i>				
0- 5kg	174	44	44	12500kcal
6- 10kg	73	18	62	32000kcal
11kg&above	37	9	71	52000kcal
None	116	29		-

Source: Authors' Computation.

Note: cumulative frequency. *Notes: all quantities were converted into grams and into kilocalories. The minimum daily percapita dietary requirement is 2400kcal. The nutritional label for carbohydrates, proteins and vitamins is found to be 4kihcalories/gram (kcal/g).*

Extending the analysis to the monetary aspect, we could obtain the following results. 24% of the households have a daily percapita expenditure of ₦83; 58% have a daily percapita expenditure of ₦107; while 18% have a daily percapita expenditure of ₦131. On the other hand, the supplementary expenditure (monetary value of quantities bought) is as follows: 30% of the households have a daily percapita expenditure of ₦36; 50% have a daily percapita expenditure of ₦60; while 20% have a daily percapita expenditure of ₦83. Therefore, the mean percapita expenditure may be aggregated as in Table 3.

Table 3: Overall Mean Aggregate Expenditure

Aggregate Percapita Expenditure	Percentages
₦119	27
₦167	54
₦214	19
Total	100

Source: Authors' Computation.

This findings showed that at least 27% of the household live below one Dollar (1\$), 54% are fairly living on a dollar while only 19% live above one dollar.

Probit Analysis of the Model

Table 4 below shows the results of the estimate obtained for the Probit model presented in Equation 4.

Table4: Probit of perception of food adequacy (Calorie Consumption)

	Calorie Consumption		
	Coefficient	Robust z – statistics	Prob. statistics
<i>Constant</i>	-0.284	-0.385	(0.6999)
<i>GenderoftheHH</i>	0.293	1.874	(0.0609)
<i>OccupationoftheHH</i>	0.027	0.207	(0.8362)
<i>Levelof Education</i>	0.470	5.671	(0.0000)
<i>Religion</i>	-0.289	-1.507	(0.1319)
<i>Familysize</i>	0.190	1.013	(0.3109)
<i>Location</i>	0.0145	-1.107	(0.2681)
<i>AgeoftheHH</i>	-0.641	-3-288	(0.0010)
<i>Assets</i>	0.297	-2.255	(0.0106)
<i>Monthlyincome</i>	0.607	-2.366	(0.0180)
	Observations = 400		
	Log likelihood = -		
	150.7		
	McFadden R ² = 0.45		

Source: Authors' Computation using STATA Econometric Software.

Once we add the full specification of the model, the McFadden R² of 0.45 shows that the independent variables explain a larger part (45 per cent) of the variation in food perception adequacy. An important part of the model is the role of the different types of variables in explaining perceptions of food adequacy. Thus gender of the household Head, occupation, education, size, location asset and income have a positive impact on food security and therefore are highly correlated to food adequacy. This suggests that the higher the level of education, asset and income, the more food security a household is in Gombe State. Also, in addition, those in urban areas have higher food security than those in the rural areas and the fact that income parameter in higher suggest that poverty has a significant impact of household food insecurity. However, age and religion have a negative impact on food security.

5. Discussion and Conclusions

The finding of the study revealed that on average, less than 50% of the households could afford to consume the minimum dietary requirement of 2400kcal. The findings also showed that at least 27% of the household live below one Dollar (1\$), 54 percent are fairly living on a dollar while only 19% live above one dollar. The estimated model indicates that the independent variables explain a larger part (45 per cent) of the variation in food adequacy perception. A number of factors such as assets, income, and occupation level of education, gender, family size indicators are correlated with perceptions of greater food adequacy.

However, differences in Religion, Age of Household Head, do not appear to influence Perceptions of food adequacy significantly.

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Economic Sagacity in Thomas Hardy's *the Mayor of Casterbridge*

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Abstract

The Mayor of Casterbridge is a true reflection of a turbulent time, where two protagonists, driven by two combative moralities and instincts, cross their sword at the battlefield of Casterbridge. Interestingly, while one party is keen to carry out the battle till death, the other shows reluctance which makes things more bizarre. In this article, I would try to understand the economic scheme of a protagonist in Marxist framework and show to the readers how the complex current of economic base and superstructure effects and affects changes to the lives of characters in this explosive novel.

Keywords: Economic, Rationality, Capitalism, Novel

JEL Classification: Z11

1. Introduction

England was seized in crossfire between two different economic modes of production. On one hand, there was volcanic eruption of several industries empowered with astronomical capital and splendid scientific tools. English agriculture, on the other hand, was on steady decline. With the repealing of Corn Law and the introduction of Free Trade Policy, imported food stuffs, especially American wheat, conquered English market and drove English farmers to the periphery. Thomas Hardy's *The Mayor of Casterbridge*, written at the backdrop of this volatile period, catches the true spirit of such dialectics.

Michael Henchard, the protagonist of *The Mayor of Casterbridge*, begins as does Defoe's shipwrecked hero, a penniless and isolated individual, forced to rely on his own initiative to survive in an alien world. His gradual emergence from penury and obscurity to social eminence is solely motivated by his raw physical strength, determination and courage. In an early stage of pre-industrial capitalism, his endeavour can thus be seen in a heroic light. But unlike Defoe, Hardy covers over the unheroic and ordinary tenor of economic enterprise which must have characterized two decades of his hero's life. After his drunken fraudulency in furnity woman's tent, we meet Henchard eighteen years later enjoying mayoral status at Csasterbridge. (Henchard's Character)

Prior to Donald Farfrae's arrival in casterbridge, Henchard's economic triumphs depends upon his skill and energy, but after many years, Henchard's business becomes too large for one man to manage by himself. His very success thus forces Henchard rely upon the help of another for the first time. Farfrae offers technical and managerial skills, as well as a secret

scientific process by which Henchard's bad grain can be restored. But in case with Henchard, who is always driven by his intuitive morality and impulsive nature, this desire for greater economic success eventually produces a competitor whose superior commercial talent jeopardize Henchard's position.

Henchard initially needs only a skilled manager to assist him in his growing business, but upon hiring Farfrae, he insists that the young man becomes his close friend and confidante. Henchard's terrible penchant for relationship and inability to discriminate between private and public world would eventually lead him to a series of ruinous decision. On the other hand, Farfrae, baptised in the fire of capitalism, always operates from an objective point of view and plans his decision without any tinge of romanticism.

Before Farfrae's arrival in Casterbridge, relationship between members of different social strata remains personal, direct and subject to mood. Rather than summarily dismiss a perpetually turgid man from his job, Henchard humiliates Abbel Whittle before his fellow workers and town folk to give him a lesson. Farfrae vehemently reacts against such humiliation and his protest is the stepping stone of his slowly-turned-sour relationship with Henchard. In the later part of the novel, we see Henchard secretly compensating for his severity by helping Abel's mother in distress. On the other hand, Farfrae lowers the wage of his labours and hurls them into more arduous work immediately after his emergence to power. Such difference in master-slave relationship can be understood in the light of Marxist reading. In the feudal period, as there remains an absence of alternative mode of production, a common preoccupation with agriculture engages master and slave into a personal relationship. This relationship, however, is severely thwarted with the advent of capitalism. In a factory, a worker performs labour on raw materials, and thus transforms those raw materials into an object; in the process, the labourer adds surplus value which ensures that the object is worth more than the original raw material. Now, the mill owners, only interested in the surplus value which can fetch them a profit, distance themselves from their slaves. Such ideological disparities create an unbridgeable gulf between Henchard and Farfrae.

As Farfrae gradually supplants the mayor as the most admired man in Casterbridge, Henchard dismisses his highly talented and productive manager in a fit of pique and jealousy, thereby creating a commercial rival for him. Henchard's commercial combat with Farfrae constitutes the tenor of this tragedy. Now, what discriminates Henchard's squabble from any other mercantile rivalry is Henchard's desire for prestige and personal glory. Both Farfrae and Henchard could do hefty business in Casterbridge market and make a prosperous living. But far from seeking economic security, Henchard risks his entire fortune to engage in a Homeric contest with his friend-turned-foe.

Henchard's economic heroism should be understood in the light of the philosophic foundation of modern middle-class regime. Hobbes and Locke champion commercial enterprise over traditional aristocratic pursuits as the chief activity for the modern citizen. They regard commercial activity as a means of taming man's vainglorious pursuits and aggressive impulse. Farfrae, in their definition, appears as a modern economic hero who enters in a marketplace without any elevated moral pursuits. He never deviates from his temperature and fully rationalised system of 'small profits frequently repeated'.

Henchard engineers his plan for an economic triumph on the basis of witchcraft and superstition. These qualities primarily enthrone Henchard in the high seat of Casterbridge; but on the face of post- industrial scientific exploits, all primordial bulwark falls like dry leaves. After rejecting Farfrae, Henchard resorts to superstitious folklore, personal vitality and rash courage. Rather than depend on the advice of a modern businessman, Henchard in the end relies on the auguries of local weather prophet in making his fateful financial decision and ruins his slightest chance of any economic revival.

Farfrae incarnates the spirit of mechanization by in Casterbridge by bringing the horse –drill to the city. Its arrival creates a stir in the market; only Henchard ridicules it. Henchard does this not because of his personal hatred for the owner of this machine, but underneath his personal dislike we can see a more impersonal reason: Henchard speaks from a rugged world where the advent of machine threatens his feudal existence. Henchard’s vehemence is not a byproduct of his personal grievance, but a mere act of facile defence on the face of aggressive capitalism.

Henchard loses everything to Farfrae: his economic sway, mayoral status and love interest. Moreover, he has to savour the indignity of working under a man who was his erstwhile employee. The fact that Farfrae has acted without malice, and is not likely to bear a grudge, makes things more unbearable still, for it is this very coolness and detachment that reminds Henchard how he has exposed himself emotionally by his impulsive acts of friendship and hatred: Farfrae’s calm ignites a murderous desire in Henchard.

But again, when he takes on unprepared Farfrae in a remote place, his intuitive morality propels him to the grotesque action of binding his left hand to his side so that he can fight with a physically inferior contestant on equal term. Because of the impulsiveness of his reflections Henchard is given no train of reasoning, simply the sudden thought that issues in his saying aloud ‘I’m stronger than he’.

He never also has necessary poison in his heart to engineer a colossal disaster. Every time Henchard comes to the edge of taking revenge, and then draws back. He settles down to expose Lucetta’s love letters to her present husband Farfrae intending: “to affect a grand catastrophe at the end of his drama by reading out the name; he had come to the house with no other thought. But sitting here in cold blood he could not do it. Such a wrecking of hearts appalled even him. His quality was such he could have annihilated them both in the heat of action; but to accomplish the deed by oral poison was beyond the nerve of his enmity.” (Chapter 35, 150)

“Character is Fate” (Hardy 2008, 107), says the narrator in Thomas Hardy’s *The Mayor of Casterbridge* (1886), quoting Novalis. Through the words of the German Romantic writer, Hardy reveals his humanism, intimating that it is through the choices an individual makes rather than because of an external force that the individual determines his trajectory in a certain direction in life. While unpacking Novalis’s claim, the novel depicts fate as an inner rather than an outer force and simultaneously reveals the narrator as a humanist and the protagonist as a human being animated by desires that, as we shall see, conflict, to a certain extent, with societal dictates. Thus, the novel represents an occasion not only for exegesis but also for a critical examination of the concept of the self, stimulating self-interpretation and self-evaluation. By citing Novalis’s simple claim, the narrator deems the individual, and

particularly the protagonist, Michael Henchard, responsible for his own failure as capitalist and father as well as for his exit from the society whose order he has disrupted. Here Hardy joins the seventeenth-century philosopher Baruch Spinoza, who had advanced the idea that we can understand an individual within a total structure.

In *Ethics*, Spinoza had thought this total structure to be one substance, God, whose existence he found necessary, and to have universal laws, to which man is subject (ID6, Spinoza 1). Yet, as a humanist, Hardy diverges from Spinoza, supplanting the one substance with the social network of the communities in Weydon-Priors and Casterbridge, in Upper Wessex, where individuals have the power to make decisions regarding their fate. I propose that Henchard fails to develop *qua* individual and as a member of society because he considers the individual and the social facets of development to be separate and chooses his action as a response to his desire rather than his reason. Following, I will illustrate that at the heart of Henchard's choices lies his fear of death, materialised as desire, first to rise on the social scale and then to be the father, a fear that the narrative uncovers when Henchard faces the uncanny effigy representing him, floating down the river. He does not understand that being a husband and father implicitly and inextricably binds the private sphere with the social network. Nevertheless, his failure makes him appear as a human being who, trying to fulfil his desire, is subject to error, inviting thus the readers' sympathy. And although to err is human, erring does not appear as justification for Henchard's actions; it merely suggests the destructive potential that lies in the individual's choices when based solely on desire.

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An Appraisal of Mudarabah System of Islamic Investment as a Panacea to Financial Exclusion in Nigeria

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Abstract

This paper analyses the expected role of mudarabah system of Islamic investment as a means of tackling the prolonged problem of financial exclusion in Nigeria. The study employs a desk research method to describe the level of financial exclusion in Nigeria and forecasts the future of it, most especially with the coming of Jaiz Bank as a full-fledged Islamic bank that uses mudarabah as one of its investment instruments. This paper concludes that Jaiz Bank and other conventional banks that offer Islamic window of banking operation should give more emphasis to Mudarabah system of investment as it offers the poor and disadvantaged members of the society with entrepreneurial ability to come out from the poverty line and become fully included financially. These poor and disadvantaged people suffer more from the menace of financial exclusion.

Keywords: Financial Exclusion, Mudarabah, Jaiz Bank

JEL Classification: D92, G31, Z12

1. Introduction

The government of Nigeria and other developing countries has made financial inclusion a priority. Financial inclusion is the availability and equality of opportunities to access financial services. It includes the extent to which individuals and businesses gain access to appropriate, affordable and timely financial product and services. This is evidenced by initiating policy strategy on financial inclusion coupled with new funding vehicles. The government of Nigeria has set a target of reaching full inclusion by 2020. The strategy is considered relevant to achieving Central Bank of Nigeria's objective of maintaining external reserves and to safeguard the international value of Nigerian currency (Naira). This objective is believed to be achievable as financial inclusion increases access to finance for micro, small and medium scale enterprises, consequently leading to greater productivity, increases in non-oil exports among other advantages (CBN, 2013).

The financial inclusion in Nigeria cannot be underestimated. For instance, Nigeria contributes bulk to figures on financial inclusion despite its position as economic giant of Africa with a population of over 190 million people. Statistically, it is clear that 73.2 million adults representing 41.6 percent of the adult population in Nigeria are financially excluded. Furthermore 38 percent of household report having a formal bank

account which includes both commercial banks (34% of household) and other financial institution such as microfinance, cooperative society and savings association thus, about 62% is accounted for.

In line with CBN financial inclusion strategy, a regional licence was granted to Jaiz Bank PLC in November, 2011 and the bank started operation in January, 2012 as the first and currently the only full-fledged non-interest Islamic bank in Nigeria. Other conventional banks like Stanbic IBTC and Sterling Bank obtained licence to operate only Islamic windows. One of the objectives of Jaiz bank is to be at every part of Nigeria so as to provide banking services to a large segment of the society that are unbanked. The bank undertakes to drive the retail banking to ensure that it provides financial inclusion to many people that are initially excluded. The Islamic bank products are expected to bring into the banking sector a large number of the population who previously stayed away from the organised conventional financial services, due to their aversion to interest based products (Umar, 2011). Interest free banking system serves as a means of achieving financial inclusion and attracting foreign investment especially from Middle East and Asian countries. It will also provide opportunity for manpower development, capacity building and healthy competition as well as fulfilling the demands and needs of not only the Muslim population but also the Non-Muslims (Dogarawa & Bello, 2014).

Issues on financial inclusion remained a global challenge with as much as 54.0 percent of adults financially excluded worldwide (World Bank, 2014). This situation is even more rampant in the developing economies where some countries have as much as 70 percent financial exclusion level. Consultative Group to Assist the Poor (CGAP, 2014) indicates that almost all economies in some Sub Saharan Africa were below the world financial inclusion average. This is as a result of the lowest share of banked households in the region. The global target has been to eliminate all hindrances and problems to financial inclusion ranging from lack of or low education, gender bias, age categorisation, to irregular income, stringent regulation and geographic locations of some citizenry that have contributed to the lack of access to financial services by billions of adults across the globe.

For example in Nigeria, Sanusi (2011) attributed the increase poverty level in the country of financial exclusion. He stressed that achieving optimum level of financial inclusion in Nigeria means empowering 70 percent of the population living below poverty level which will boost economic growth and development which could eventually reduce the level of poverty in the society.

In the year 2012, about 67.1 percent of the Nigerian population were reported to be living below poverty level, despite a continuous growth in the Gross Domestic Product (NBS, 2012). Economic analysts have described this kind of growth in GDP as exclusive since it has not translated into any real economic gain in terms of employment generation, poverty reduction and improvement in general standard of living of the citizenry. This uneven growth resulted in the exclusion of 57 percent of the country's adult population from formal financial services (Abiola, Folasade & Alexander, 2015). Today the non interest banking remains a key component of growth recording a huge performance. For instance, it recorded 5.5% in 2016, which doubles to 11% in 2017. Its gross earnings rose by 40 percent from 6.18 billion naira in 2016 to 10 billion naira in 2017. In a similar vein, Dabiri and Sanyaolu

(2018) wrote on appraisal of Jaiz bank on financial performance on non-interest banking. The study reports that bank current ratio in 2012 was 3.5% which fell to 2.6% in 2013, in 2014, it fell as low as 1.5%, in 2015, and it increased to 1.8% and dropped to 1.5% in 2016. Bank quick ratio stood at 0.9% which rise to 1.7% IN 2013 and fell 0.6% in 2014, it further to 1.0% in 2015 and fell to 0.8% in 2016.

2. Literature

To understand the concept of financial exclusion, Sinclair (2001) viewed it from both narrow and broad senses. In narrow sense, financial exclusion entails exclusion from particular sources of credits and other financial services such as: insurance, bill payment services and having access to appropriate accounts. From the wider perspective, it refers to factors which have the effect of shutting out of the less privileged well off from mainstream money services. According to Howell (2005), financial exclusion is the process that prevents poor and disadvantaged social groups from gaining access to the financial system, this is however, considered as lack of access to a specific and particular products or services.

According McAteer (2008), financial exclusion of the poor is generally considered to mean a lack of access to banking services. It has been viewed as a result of closure of bank branches and building societies, offices and thus ignores the tendency of informal-sector lending offering a substitute for bank services in remote areas in United Kingdom. The concept is also viewed as the inability of some individuals (adult people) to access and use basic financial services. Such as: savings, loans, and remittances in a manner that is reasonably convenient, reliable and flexible in terms of access and design (Mor&Ananth, 2007).

In the argument of Obaidullah and Abdullatif (2007), exclusion of the poor from the financial system is a major factor contributing to their inability to participate in the development process. Building an inclusive financial system therefore, is a central goal of policy makers and planners across the globe. Financial exclusion can take different shapes and manifest in various forms by different groups (FSA report, 2000). In fact there is a general consensus among scholars on the issue of financial exclusion, virtually all agreed that it may either be a cause or a consequence of social exclusion or both (Howell, 2005). The concept has been the subject of increasing interest and debate this is because it is central to the broader issue of social deprivation (Warsame, 2009).

Causes of Financial Exclusion

Causes of financial exclusion are very complex and identifying one single factor that causes exclusion will be difficult or even impossible. For example according to Warsame (2009), low income causes further problems such as lack of savings which again causes a lack of funds or assets. In the same line, unemployment further begets low income which is one of the most frequently mentioned drivers of financial exclusion. Nevertheless, the major causes of financial inclusion include low income, unemployment, irregular/casual work, lack of financial education, poor financial habits and geographical distance (Howell, 2005).

Ironically, there is a report by Financial Service Authority FSA (2000) which argues that the problem of financial exclusion is a direct result of increased financial inclusion. This is because as financial inclusion increases in the society a small portion of individuals and households must be left behind. While Kempson (2001) looks at the causes of financial

exclusion from competitiveness of financial services industry in which the low incomes people are considered unworthy of the financial product by the financial service providers. At the end, many individuals will not have their needs met by the competitive financial services market. Also ethics or religion is viewed as one of the causes of financial exclusion; relatively Muslims may be excluded than non-Muslims when they find it difficult to have a financial product in accordance to their beliefs.

Kempson (2006) identified some reasons why people are financially excluded. He analysed them in the following ways: Those that are unemployed may find it difficult to have a bank account, simply because banks need the proof of identity before they can offer some services. In the same line an identity is required due to the problems associated with money laundering. There are rules which prevent financial institution to relate with their clients without proper identification of whom those clients are. This identification is also required to avoid terrorist attacks. Some individuals are financially excluded due to lack of access to financial services in their areas, for example in most of the developing countries, rural areas are neglected which requires rural people to travel several kilometres before they can access financial products or services offered by banks. In Nigeria this is one of the most important barriers to financial inclusion.

Cultural and language barriers are some of the reasons minority community people face in accessing financial services. To Kempson (2006), countries with high level of financial exclusion, self-exclusion by individuals is more rampant with low income earners than the exclusion by banks through refusing to open an account. When a person is unemployed or has a low income, they may not likely to open an account with any formal financial institution; therefore they will not be financial included but rather be self-excluded. As such countries with high rate of unemployment and low levels of income tend to have higher levels of financial exclusion (Onaolapo&Odetayo, 2012). Lack of financial education of some customers about various financial products and services as well as the benefit attached to each product poses a serious challenge to financial inclusion system. Therefore, banks and other financial institutions need to educate their clients on different products available and especially when new product is introduced, so that individuals can take the full benefits of all products and services and get themselves included financially.

In Nigeria for example, the issue of hidden bank charges in the banking industry has been there for long. Some of these charges range from charges on e-banking, to mobile transactions. In such a case, customers are always complaining about unexplained deductions on text message alerts, which may sometimes be charged even twice for a single alert. These have contributed a lot to high level of financial exclusion from the formal financial institution in Nigeria. Globally, banks have different conditions with regard to opening an account with them; some banks demand high minimum cash balance for a potential customer to operate with them. In this situation those with low income will have themselves excluded because the terms and conditions can scare them away.

Most of developing countries have not taken the full advantage of mobile banking, which has been identified as a possible tool to provide basic financial services to millions of the unbanked people in both rural and urban communities. Mobile telephone allows expansion and access to financial services as well as reducing transaction cost, especially the cost of

running physical bank branches. The increased access to financial services for underserved individuals helps in narrowing the financial infrastructure gap, especially in developing economies like Nigeria, where time and distance in reaching physical bank branch cost high to the customers. Therefore ICT and mobile phones in particular play a significantly role in improving access to credit and deposit facilities, allow more efficient allocation of credit, facilitate financial transfer and boost financial inclusion which in turn will help to stimulate private investment and general economic growth (Onaolapo & Odetayo, 2012).

Consequent Effects of Financial Exclusion

The consequences of financial exclusion are many and can manifest in different forms or magnitude, ranging from financial implication to social implication. According to Warsame (2009), the consequences of not having a bank account could be really painful due to the inconveniences and extra cost associated with it. For example someone to receive a cheque from a third party in his name means paying extra money to get it cashed that is why, there are remitting agencies and cheque cashing enterprises in some countries who are the only option open to those who cannot access banking products and services. In the same line of analysis Streliz and Kober (2007) argue that those who are excluded financially pay more despite of being the poorest. For instance in most countries utility supplier charges more if the payment is not made through direct debit or electrically transferred, which means the poor will pay much as they are excluded from the highly banked and cashless economy. Looking at this argument it is very obvious that those excluded pay additional cost for the same services accessed by those that are financially included. In today's global financial advancement and development everybody needs to access financial services so as to avoid being exploited.

Another serious implication of being excluded financially arises when those excluded are in need of urgent finance or in total financial difficulties and cannot access it due to the fact that they are excluded from the mainstream financial system. The only alternative available is to raise the required finance from the sub-prime market and unlicensed lenders such as loan sharks whose charges are exorbitant. To Collard and Kempson (2005), the financial consequence of raising finance through these intermediaries is very alarming and far-reaching for the excluded people who are in most cases, the poorest and most vulnerable members of the society that cannot easily afford such extortionate charges.

Low income customers normally make use of loans from cash converters and credit retailers who buy and sell at high interest rates than average users. For example, it is normal for a poor person to get some goods most especially durable ones like a fridge, television set or even a radio set and end up paying double the amount originally borrowed. The interest charged was exorbitant due to his or her poor financial skills and the absence of alternative financial arrangement (Warsame, 2009).

From the social point of view, financial exclusion has many negative implications. For instance, one will feel discriminated or having low self-esteem living in a country where majority of the population is banked and he has no any bank account. In such a situation those that are excluded need to bring themselves down to ask for assistance whenever they have to receive or pay funds through a bank account. Warsame (2009) also argues that when faced with financial hardship, the excluded usually resort to unlicensed lenders like loan

sharks who apart from charging extortionate rates as interest also employ violence and intimidation tactics as a means of getting back their money in case the borrower defaults. This has a terrible negative psychological and social impact on the borrowers which can lead to serious health problems such as stress and depression. Further analysis indicates that financial exclusion reinforces social deprivation which is not limited to only one single individual but it affects the community as a whole. Under this situation a second class citizens can be created from those who are financially and socially excluded in the mainstream societal functions.

Financial exclusion can deny a segment of the society most especially poor and the disadvantaged individuals the opportunity to be active and productive members of the community and thus hinders them from fully integrating and contributing to the well-being of the nation in which they live. At the end of it, social ill will become more visible, such as lack of social cohesion which can lead to social disintegration. In terms of how people run their lives, financial exclusion can put them in a very difficult and critical situation, individuals will feel they have lost hope and total control of their lives. This position can cause anxiety and so many personal and community consequences.

3. The Advent and Concept of Islamic Banking and Finance

When people are asked what is Islamic banking and finance, for example, they will come up with different answers and understanding depending on their level of exposure about Islamic economics in general. To some, Islamic finance is just another religious doctrine to provide financing for mosques, charities or funding for Muslim entrepreneurs. Furthermore unconvinced secularist and other critical observers would argue that Islamic finance is a broader political agenda to transform the present state of the world or some aspect of it to be in according with the principles of Islam. However, it was discovered that Islamic banking and finance is much more than political or philanthropic endeavours. In fact since its first inception in the 50s and 60s it has witnessed the growing concern and interest among Muslims and non-Muslims alike such as academicians, bankers, fund managers, other professionals as well as the general public towards establishing a more viable, robust and competitive Islamic financial system that may serve as the best alternative to the conventional system of banking and finance operation (ISRA, 2012).

Islamic and conventional banks have similar purpose of channeling funds between the Surplus-Fund Units (SFU) and the Deficit- Fund Unit (DFU). However, Islamic banking and finance, is a system that complies with Islamic principles such as the prohibition of interest, excessive risk and speculation in its transaction (Idris & Lawal 2013). According to Abdelhamed (2005), as cited by Idris and Lawal (2013), the universally accepted definition states that an Islamic bank is a financial institution whose statutes, rules and procedures expressly state its commitment to the principles of Islamic Shari'ah (Jurisprudence) and forbids the receipt and payment of interest on any of its transaction. The Islamic Banking Act of Malaysia 1983 further defined Islamic banking as a company which carries on Islamic banking business, whose aims and operations do not involve any element which is not approved by the Shari'ah. Islamic banking was also defined by Abdel-Magid as a bank owned by its shareholders, established to conduct banking and investment activities in accordance with Islamic Shari'ah and its own articles of association (Kalait Hasan & Mohammed, 2007).

It was observed by Chapra (2000) that every activity of rational human being has a purpose. It is this purpose that determines the difference and nature from other activities. According to him, the justification for Islamic banks would be there only if its operations are directed towards the realisation of a purpose that cannot be realized by the conventional banking system. The purpose that of Islamic banking is quite unique and, in a nutshell, Islamic banks are set up generally to comply with precepts of the Shari'ah (Abdullahi, 2013).

The guiding rules of Islamic financial system are derived from the Qur'an and Sunnah of the Prophet Muhammad (PBUH). The Shari'ah spells out the Qur'anic teaching in three dimensions namely: *Aqidah* (faith and belief), *Akhlak* (ethic and morality) and *Muamalat* (transactions). There are two types of guidelines one must observe in Islamic transaction. One is the legal guidelines, such as prohibition of taking or giving interest (*Riba*) in financial dealings as Qur'an says in chapter 2 verse 275 "Allah has allowed trading and for bidden (Usury) interest. To whosoever which the admonition has come from his load, then he desists from it". It also does not condone wealth creation by means of investment in unlawful transactions such as gambling. Allah (SWT) says, "They ask you about intoxicants and games of chance. Say: In both of them there is a great sin and means of profit for men, and their sin is greater than their profit" (Qur'an 2:219). The second aspect is the ethical guidelines; the Qur'an (2:282) enjoins trustworthiness (*Amanah*) and prohibits deceit and greed in profit taking. These commands and prohibitions by Almighty Allah are mean to foster harmony in economic transaction and activities so that justice can prevail and thus man is able to obtain peace of mind (Rosly, 2010).

4. Mudarabah and the Role it can Play in Tackling Financial Exclusion Problem

Literally, the word *mudarabah* is derived from the Arabic phrase "*al-darb fi al-ard*" which means to make a journey. This meaning is related to this type of partnership because normally it requires in the past to travel to do business. In the Qur'an, there is not any clear mention of the word *mudarabah* but some scholars use some verses to establish a legality of it, such as where Allah (SWT) says "...and others who travel in the land seeking of the bounty of Allah" (Qur'an, 73:20). Also he says "... but when the prayer is ended, they disperse abroad in the land and seek Allah's grace" (Qur'an, 62:10). In another verse Allah says "... there is no blame on you in seeking bounty from your lord...." (Qur'an, 2:198). From the above verses, one can see that they can be interpreted to include those who travel for the purpose of trading and seeking permissible income (ISRA, 2009). The history of *mudarabah* can be traced to the time of prophet Muhammad (PBUH) when he engaged himself in business trading goods owned by Khadija as a *Mudarib*, who he married later.

Technically, *mudarabah* is a partnership system of business where by one party (*rabbul mal*) provides capital and the other party (*mudarib*) provides business expertise and entrepreneurial skills. In other words, the investment capital comes from one partner the investor, while the labour and the management is the responsibility of the second partner the entrepreneur, and both parties enter into a contractual agreement of sharing the profit at a predetermined ratio. In case of any loss, the provision of Islamic law stipulate that is to be born solely by the capital owner (*rabbul mal*), while the entrepreneur's (*mudarib*) labour and work will go in vain. Nevertheless if the loss occurs due to deliberate mismanagement or fraud by the entrepreneur, that should be his sole liability. Some classical scholars use *mudarabah* to mean *qirad* or *muqaradah*. Both terms are derived from the word *qaradah*

which means to cut off simply because the capital provider cuts off some of his money to be utilized by the entrepreneur in business activities (ISRA, 2012).

Mudarabah business transaction should be carried out under certain conditions, for example right from the period of the Prophet (PBUH) it was narrated that Al-Abbas bin Abdulmuttalib when giving capital through *mudarabah*, always advised the entrepreneur not to take the sea passage, not to descend valleys and not to buy any animal with a soft belly. If the entrepreneur does any one of these things then he is responsible. This issue was brought to Prophet (PBUH) and he agreed to it (AbdulRahman, 2014). The major conditions to be observed under *Mudarabah* are: conditions related to offer and acceptance (*Sighah*). Offer is done by uttering the terms of *Mudarabah* or any other terms to that effect, if the other party accepts the offer and takes the money, then *Mudarabah* contract is concluded. The second condition needs that both parties in the contract must be qualified persons under the law, which means that they must be of sound mind. Some other conditions are the determination of the value of the *Mudarabah* property in case it is in the form of other assets that are movable or immovable. This value must be determined and agreed upon on the day the contract is concluded. It is also a requirement that the mechanism for profit distribution to be clearly known to each party so as to eliminate any uncertainty and possibility of dispute. The distribution of the profit must be on the basis of an agreed percentage of the profit not on the basis of a lump sum or percentage of capital. This arrangement should be made initially while entering into the contract agreement.

Taqi (2009) described two main categories of *Mudarabah* in Islamic banking and finance. *Mudarabah Al Mutalaqah* (unrestricted *Mudarabah*): this is the kind of *Mudarabah* is the one that is left open for the entrepreneur to invest in any kind of business which is considered lawful from the Islamic point of view. The capital owner will allow the entrepreneur to administer a *Mudarabah* fund without restrictions on the type of work that is to be done, the location, the time, mode of payment, etc. Most of the Islamic banks around the world practice these principles. There is no restriction upon them from the depositors and investors to invest the money. The only condition is that the banks must ensure that the money is invested in lawful (*Halal*) business activity.

Mudarabah Al-Muqayyadah (restricted *Mudarabah*): under a restricted *Mudarabah*, a capital provider restricts the entrepreneur that the investment should be limited to a particular location or to a particular type of business or contract. In this situation the entrepreneur is not authorised to invest the money in any business activity of his own choice but rather he should take permission from the capital owner. In this system the retail Islamic banks find it unattractive to accept the money under such a restriction, as it narrows down the channels and avenues of investing in reliable and more profitable activity and restrictions can increase the cost of running the specified projects (Iqbal & Murakhor, 2007).

In modern time Islamic banking, the *Mudarabah* principle is used as a mode of financing to invest the deposits of the customers in business ventures. The banks do this through the system of two-tier or second tier *Mudarabah*. Initially the capital owners or depositors give their money to the bank for investment, here the bank serves as entrepreneur while the depositors are the capital providers, then the bank will enter into a second agreement to give

money to the entrepreneur for investment where the bank now serves as the capital owner. According to Uzair (1955), this arrangement was designed in the early 50s.

The experience of Islamic banks with *Mudarabah* is few in number as the contract is prone to risk. The use of *Mudarabah* is mainly for short-term purposes in which the banks can reduce risk to a bearable low level and the return is virtually guaranteed. Due to this potentiality of risk, Islamic banks are not using *Mudarabah* financial technique to the fullest (Ahmed, 2009). Some of the ways banks adopt to minimise the level or extent of the risk involved in *Mudarabah* system are: the entrepreneur is required to submit the balance sheets, profit and loss accounts, progress reports and all the relative information to the Islamic bank. Also the representatives of the bank can check the accounts and do the stock taking at any time in the warehouse. In case of violation of the principle of the contract as well as the breach of the trust, the bank can terminate the contact without giving any prior warning.

Mudarabah system of investment is regarded as very essential in tackling the problem of financial exclusion in Nigeria due to the consideration that the replacements of interest bearing financial products by profit and loss sharing modes of financing will inevitably promote small and medium entrepreneurship. Unlike conventional banks with their collateral-based lending and credit worthiness system that favour only established business and corporate clients. But Islamic banks with their emphasis on PLS instruments which are compatible with the needs of small entrepreneurs with viable projects ideas that are normally avoided by conventional banks due to insufficient collateral will now have a greater opportunity to be included financially. Therefore, *Mudarabah* arrangement will help in bringing poor and disadvantaged members of the society into the fold of financial inclusion.

5. Conclusion and Recommendation

Islamic banking system is based on profit and loss sharing scheme not based on interest or predetermined charges. The system ensures that more emphases are placed on reward for effort rather than on reward for merely owning capital. Islamic banking institutions had developed techniques that replace interest-based income with cash flows from the productive sources through partnership arrangement. It particularly attempts to find more socially acceptable and attainable substitute to interest bearing modes of finance, in its desire to provide justified distribution of wealth and income in the society. Because of its moral values and ethical standard, Islamic finance is gradually gaining universal acceptance and attracting funds from Muslims and Non-Muslims alike. Currently, Islamic banking is thriving and growing fast in many western nations who are aiming of becoming Islamic finance hubs.

The core values of Islam are built upon greater emphasis on social justice, inclusion and sharing of resources between the haves and have not. Islamic finance addresses the issue of financial inclusion from the two points of view either through promoting risk sharing contracts that provide an alternative to convention interest based products such as *Mudarabah* and *Musharakah* systems or through specific instruments of redistribution of wealth in the society, such as *Zakkah*, *Sadaqa*, *Waqf* and benevolence loan. Both modules complement one another in eradicating poverty as well as building a strong and healthy economy. Therefore, the paper recommends that the regulatory agencies and *Shariah*

Advisory Boards should make sure that the institutions providing *Shariah* compliant products and services give much emphasis to *Mudarabah* system of investments due to its ability to make the poor entrepreneurs to become economic active members of the society. Also Jaiz Bank and other banks that provide service in line with Islamic banking rules should intensify effort toward enhancing the social justice aspect of Islamic banking and finance.

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Assessment of Public Revenue and Economic Growth in Nigeria

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Abstract

This study examined the impact of public revenue on economic growth in Nigeria. The study used a time series data for the period 1986-2017. The theoretical framework and the methodology of the study are based on the Benefit Cost theory, which assumes that steady state may occur in an economy and that when steady growth rate is altered the economy will fall to disequilibrium. This study employed Augmented Dicker Fuller (ADF) test, Co integration test, error correction model and granger causality test. The results show that there is a positive and significant relationship between public revenue (Oil revenue, Non-Oil revenue and Federal government independent revenue) on economic growth in Nigeria. The cointegration test showed clearly that public revenue and economic growth have a long run relationship. Findings from the econometric model using regression showed that there was a positive relationship between the variables and economic growth. Based on the outcome the study recommends that government should as a deliberate policy; increase its macroeconomic policies to improve efficiency and productivity in oil revenue, Non-oil revenue and Federal independent revenue because of their positive impact on economic growth.

Keywords: Public revenue, Economic Growth, Nigeria Tax System

JEL Classification: F43, H27, H71

1. Introduction

Public revenues are inflow of financial resources into the government covers from other economic units. This involves non repayable receipts and grants and is further divided into current and capital receipts. Current receipts comprise tax and non tax receipts within a given period, capital receipts are receipts from non financial assets used in production process for more than one year. Grants on the other hand, are non compulsory, non-repayable unquited receipts from other government and international institutions (.O. A. Otubala 2011)

Bathia (2006) defined Public revenues as consisting of revenue receipts and capital receipts. Revenue receipts include routine and earned. While capital receipts cover those items which are basically of non repetitive and non routine variety and changes government financial assets and liabilities. In view of the above assertion, this study seeks to analyze the impact

of public revenue and economic growth in Nigeria. In developing country like Nigeria growth performance slows below expectation 'Tragic' and of crisis proportion. Yakub (2006) noted that about 70% population of Nigeria today lives in poverty, high unemployment rate and collapse of basic economic infrastructures, Elbadewi and Nwaga (2000), Ekpo (2001)

Based on the problems espoused so far, this study is necessary to examining the impact of public revenue and economic growth. Therefore, current research intends to fill the identified gaps by investigating the relationship between public revenue and economic growth in Nigeria. The paper is divided in to five sections, section one is the introduction, section two reviewed the related works in the area, section three method of analysis and section five is conclusion and policy implication.

2. Literature Review

Conceptual Issues

Jhingan (2007) defined economic growth as an expansion in output of one or more sectors of the economy without a change in its structure. According Jhingan stated tha economic growth is related to quantitative sustained increase in the countries per capital output or income accompanied by expansion in its labour force, consumption, capital and the volume of trade. Essien (2003) economic growth means more output without a change in technical and institutional arrangement. This implies that Essian threads the path of barro, since expansion of various system is expected to bring more output. To Essian, the structure may change but the technical and institutional arrangement remains same. Patrick Joseph (2018) defined economic growth as a sustained increase in per capita national output or net national product over a long period of time. It implies that the rate on increase in total output must be greater than the rate of population growth.

Public revenues can be explained both in Broad and Narrow sense. The Broad sense of it includes all income and receipts irrespective of their sources and nature which the government obtains during any given period of time, while in the Narrow sense it includes all those sources of income which is described as revenue resources. In the broad sense of it, it will also include loans which the government raises under the term pubic revenue or more properly public income. The distinction however is that in the narrow sense in which the term "public revenues" is used in public finance includes only those income which are not subject to repay back while in the broad sense of the term includes all the receipts of the government irrespective of the facts whether they are subject to future payback.

There are three main sources of government revenue in Nigeria. Two sources that accrue to federation account are oil and non-oil revenue sources. The third source of revenue to federal government is the independent sources which accrue to federal government directly without passing through the federation account. The federal government also maintained an account called the VAT POOL outside the federation account. Government also sources for fund when expenditure outstrips its current revenue. This call for another options of revenue such options include deficit financing which include money creation, domestic and external borrowing. These sources of revenue together with government domestic revenue are collectively called public revenue (M. A. Otulaba, 2011)

Empirical Literature

Egwaikhide (1988) analyzed the structural shift of government revenue in Nigeria from 1960 -1982 linked direct government revenue to the level of economic development using growth in GDP as a proxy for economic growth. He used two sets of regression equation by breaking sample period into two, 1961-1971, and 1972-1982. First regression analysis indicated that a positive relationship exist between the variables. The second regression result indicates that the coefficient increase and the percentage of variables also rose from 81 percent to 83 percent. He concluded that result of the regression analysis indicates that external fund has been the single most important sources of government revenue which means that instability in this section has significant extents in internal means economic variable through its extents on national and state budget. The study also found that economic development has a structural impact on direct government revenue contrary to Egwaikhide (1988). Omoruyi (1983) carried out a similar study for about the same time from 1960 -1979 and breaking the sample period into two and adopting the same measures. He found out that the result differs from Egwaikhide (1988) where the coefficient of elasticity obtained by Omoruyi (1983) for the first sample period 1960-1969 was 1.09 while that Egwaikhide was 0.08 for the period of 1961-1971. The result premised on assumption of absence of any other significant change in the marginal values of direct tax in the period 1960-1971. Again the elasticity of coefficient obtained by Omoruyi 1970-1974 was higher than that obtained by Egwaikhide. At this point one can conclude that the inference cannot be actually drawn between the two conflicting results because of certain statistical parameter used to facilitate observations.

Ayuba (2014) analyzed the impact of tax revenue on economic growth using times series data from 1993 to 2012. The data sets sourced from secondary sources were analyzed using the ordinary least squares approach. From the results, it was discovered that tax revenue exerted a positive impact on economic growth in Nigeria. It was thus recommended inter alia that efforts should be intensified by government at all level towards increased collection of non -oil taxes. Adeniyi (2012) evaluated the effect of tax administration on revenue generation to the Enugu state government. The study incorporated both primary and secondary data which was analysed using simple percentages and hypotheses tested using chi-square statistical method at 0.05 level of significant for validity and to make decisions. From the findings, there was rampant incidence of tax evasion and avoidance in Enugu state due to inadequate, ineffective and inefficient tax administration. The researcher concluded among other things that the apathy of Enugu state people towards payment of tax be checked by involving them in the decision making of tax administration, collection and utilization of the tax revenue. Ojong, Ogar and Arikpo (2016) undertook a study on the impact of tax revenue on economic growth: evidence from Nigeria. Data were sourced from Central Bank Statistical Bulletin and extracted through desk survey method. Ordinary least square of multiple regression models was used to establish the relationship between dependent and independent variables. The findings revealed that there was a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It showed that there is a significant relationship between non-oil revenue and the growth of the Nigeria economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy. It was recommended that

government should endeavour to provide social amenities to all nooks and crannies of the country.

Similarly, Ogbonna and Appah (2012) focused on Impact of Tax Reforms and Economic Growth of Nigeria: A Time Series Analysis. Data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin, Federal Inland Revenue Service (FIRS) and Office of the Accountant General of the Federation. The data collected were analyzed using relevant descriptive statistics and econometric models such as White test, Ramsey RESET test, Breusch Godfrey test, Jacque Berra test, Augmented Dickey Fuller test, Johansen test, and Granger Causality test. The results from the various test shows that tax reforms is positively and significantly related to economic growth and that tax reforms granger cause economic growth. Adegbe and Fakile (2011) concentrated on the Company Income Tax and Nigeria Economic Development relationship; they used Chi-square and Multiple Linear Regression analysis in analyzing the primary and secondary data respectively and concluded that there is a significant relationship between company income tax and Nigerian economic development. They also affirm that tax evasion and avoidance are major hindrances to revenue generation. Nwadiolor and Ekezie (2016) concentrated on the effect of tax policy on Economic Growth in Nigeria. The study uses annual time serial data of 20 years (1994-2013) collected from the published report of the FIRS of various years, OLS regression analysis was use to investigate the relationship that exist between the dependent and independent variables. The findings revealed that tax have a significant effect on the Economic growth in Nigeria. Afuberoh and Okoye (2014) carried out a study on the impact of taxation on revenue generation in Nigeria: A study of federal capital territory and selected states. In achieving the objective of the study, the researcher adopted primary sources of data for the study. The testing of the hypotheses of the study was done using regression analysis computed with the aid of SPSS version 17.0. The study discovered among others that, taxation has a significant contribution to revenue generation and taxation has a significant contribution on Gross Domestic Product (GDP).

The study attempt to fill this gap after extensive review of literature on government domestic public revenues sources (public revenues) which include revenues from oil, non oil revenue and revenues from other sources including federal government independent revenue, where the structure and trends of public revenues was examine and the effect of public revenues on economic growth was also analyzed. To make the work unique we use multivariate co integration Error-Correction model (ECM), Granger Causality Test, impulse response function to analysis and variance decomposition using annual time series data from 1986 – 2017.

Theoretical Framework

This study underpinned Benefit received theory and the theory proceeds on the assumption that there is basically an exchange relationship between tax-payers and the state. The state provides certain goods and services to the members of the society and they contribute to the cost of these supplies in proportion to the benefits received (Bhartia, 2009). Anyanfo (1996) argues that taxes should be allocated on the basis of benefits received from government expenditure. According to this theory, citizens should be asked to pay taxes in proportion to the benefits they receive from the services rendered by the government. The government

confers some benefits on tax payers by providing social goods which the tax payers pay a consideration in the form of taxes for using such goods (Ojong, Ogar and Arikpo, 2016).

3. Methodology

This methodology employed to analyse the effect of public revenues and economic growth in Nigeria proxy by RGDP from 1986-2017. The study employed an econometric technique that is to analyse the effect of public revenues and economic growth in Nigeria. The important basic macroeconomic variables of interest derived from other studies includes, Real Gross Domestic Product (RGDP), Aggregate domestic public revenue decomposed into oil revenue (OIR), Non oil revenue (NOR) and federal government independent revenue (FGIR). The important basic macroeconomic variables of interest derived from other studies includes, Real Gross Domestic Product (RGDP), Aggregate domestic public revenue decomposed into oil revenue (OIR), Non oil revenue (NOR) and federal government independent revenue (FGIR).

Model Specification

In other to analyse the effect of public revenues on economic growth, the econometric techniques employed is the ECM mode. one of the two econometric techniques could be used for the analysis, one is the standard Auto regression model (VAR) with all variables specified in levels, the other is the Error correction model (ECM) that explicitly model variables integrated of order 1 (0) and a cointegrating relationship that are present in the data.

The general form of the model in this context is specified as.

$$Y_t = m + A_1Y_{t-1} + \dots + A_pY_{t-p} + e_t \dots \dots \dots 1$$

Where

The model can be presented in a functional format as

$$RGDP = f(OIR, NOR, FGIR) \dots \dots \dots 2$$

The model can also be represented in log linear econometric format. The reason for specifying the model in the logarithm transformation is that logarithm transformation are often used in time series analysis as a means of removing growth overtime in the variance of data

$$\log RGDP_t = \beta_0 + \beta_1 \log OIR_t + \beta_2 \log NOR_t + \beta_3 \log FGIR_t + U_t \dots \dots \dots 3$$

Where

RGDP=Real Gross Domestic Products

OIR=Oil revenue

NOR=Non oil Revenue

FGIR= Federal Government Independent Revenue

$$\beta_0 + \beta_1 OIR + \beta_2 NOR + \beta_3 FGIR + U_t$$

β_0 = Intercept, β_1 ----- β_3 are the parameter, U_t = Error term

Estimation Techniques

This technique is employed to analyse the effect of public revenues and economic growth. Before estimate the system that governs the relationship between public revenues and economic growth, check for the order of integration of these variables. The unit root test, the cointegration test and the granger causality test. In this study adopted the error correction model (ECM) similar to other researchers such as Anastassiou and Dritsaki (2005), Ogunyele (2008) after ascertaining the stationarity properties of the series where the unit root test, Johansen co integration test and the Granger causality test of the variables where carried out.

4. Result*Presentation and Data Analysis*

Table 1: Stationarity Test Result of ADF

Augmented Dickey-Fuller (ADF) Test			
Variables	ADF Test Statistic	Critical Value	Status
RGDP	-4.013426	-2.9705	2(1)
OR	-4.134244	-2.9665	1(1)
NOR	-3.994835	-2.9665	2(1)
FGIR	-5.778055	-2.9705	1(1)

Source: Author's own computation from E-view 2018

The ADF test result shown in table 1 above indicates that the Real Gross Domestic Product, Oil Revenue, Non-Oil Revenue and Federal Independent Revenue in level and differences reject the null hypothesis of non-stationary at the 5% Mackinnon (1988) critical value. This implies that they are integrated of order one i.e. I(1), 1(1) and 2(1).

Table 2: Co-integration Test Results

Hypothesized	Trace	5 Percent	1 Percent
No. of CE(s)	Eigenvalue	Statistic	Critical Value
None	0.471878	39.15347	47.21
At most 1	0.276218	20.00064	29.68
At most 2	0.238355	10.30270	15.41
At most 3	0.068676	2.134446	3.76

Source: Author's own computation from E-view 2018

This Paper analyses the cointegration of the variables to establish if there exist any long run relationship among the variables using Unrestricted Cointegration Rank unit test. The result is in table 2. Cointegration test of the variables confirms the existence of long run equilibrium relationship among the variables. The trace test reveal the existence of one cointegration equation at 5 percent level of significance and the maximum Eigen value test also confirm the result. Here, we test whether the regression residuals are co-integrated, that is, whether there is long-run relationship between the dependent and independent variables in the model. Therefore, by employing Johansen Co-integration test we make use of the trace statistics and Max-Eigen respectively by comparing their values with the critical

values at 5% level. If the values of at least one of the Trace Statistics/MAX-Eigen are greater than the critical value, then we conclude that there is a long-run equilibrium relationship otherwise the regression is not co-integrated.

The Augmented Engle-Granger (AEG) co-integration test is carried out based on the estimated model, which result is shown in table 2. The residual term (U_t) series generated from it was found to be stationary at level for both the intercept and trend models. The result presented in table 4.2. shows that the null hypothesis of no co-integration is rejected at the 5%. Asymptotic critical level for intercept and trend models respectively. Therefore, there exist long-run relationship between the variables rate are rejected.

Table 3: Error Correction Mechanism

Cointegrating Eq:	CointEq1			
RGDP(-1)	1.000000			
OILR(-1)	0.330541 (0.14650) [2.25618]			
NOILR(-1)	-0.582387 (0.13828) [-4.21151]			
FGIR(-1)	0.033861 (0.01449) [2.33650]			
C	-6.490333			
Error Correction: CointEq1	D(RGDP) 0.007533 (0.03979) [0.18933]	D(OILR) -0.293904 (0.55334) [-0.53114]	D(NOILR) 0.548441 (0.40608) [1.35057]	D(FGIR) -7.584271 (1.95694) [-3.87557]
D(RGDP(-1))	0.154087 (0.16936) [0.90984]	-1.147412 (2.35523) [-0.48718]	-3.310989 (1.72843) [-1.91561]	-2.094183 (8.32946) [-0.25142]
D(RGDP(-2))	0.708433 (0.19487) [3.63550]	0.214721 (2.70999) [0.07923]	-3.504437 (1.98877) [-1.76211]	-6.818203 (9.58410) [-0.71141]
D(OILR(-1))	-0.001440 (0.02282) [-0.06312]	0.323315 (0.31729) [1.01899]	0.068244 (0.23285) [0.29308]	3.393396 (1.12212) [3.02409]
D(OILR(-2))	-0.018516	-0.116708	0.046004	1.843280

	(0.02216)	(0.30821)	(0.22618)	(1.09001)
	[-0.83549]	[-0.37866]	[0.20339]	[1.69107]
D(NOILR(-1))	0.050759	-0.419282	-0.331949	-4.130590
	(0.02760)	(0.38388)	(0.28171)	(1.35761)
	[1.83890]	[-1.09223]	[-1.17832]	[-3.04255]
D(NOILR(-2))	0.037571	-0.106603	-0.001550	-3.465017
	(0.02358)	(0.32794)	(0.24066)	(1.15977)
	[1.59329]	[-0.32507]	[-0.00644]	[-2.98767]
D(FGIR(-1))	0.000594	-0.035448	0.019664	-0.204853
	(0.00372)	(0.05179)	(0.03801)	(0.18316)
	[0.15958]	[-0.68448]	[0.51739]	[-1.11846]
D(FGIR(-2))	0.005307	0.054678	-0.020110	0.111261
	(0.00375)	(0.05220)	(0.03831)	(0.18461)
	[1.41399]	[1.04747]	[-0.52495]	[0.60269]
C	-0.005853	0.132483	0.252836	0.593434
	(0.00696)	(0.09679)	(0.07103)	(0.34232)
	[-0.84090]	[1.36871]	[3.55936]	[1.73356]
R-squared	0.509200	0.153068	0.441188	0.564944
Adj. R-squared	0.276716	-0.248110	0.176487	0.358865
Sum sq. Resids	0.004018	0.777057	0.418493	9.718968
S.E. equation	0.014542	0.202232	0.148411	0.715209
F-statistic	2.190258	0.381546	1.666743	2.741395
Log likelihood	87.67341	11.33407	20.30747	-25.29758
Akaike AIC	-5.356787	-0.092005	-0.710860	2.434316
Schwarz SC	-4.885306	0.379476	-0.239379	2.905797
Mean dependent	0.019310	0.079655	0.090345	0.099310
S.D. dependent	0.017099	0.181019	0.163543	0.893220
Determinant Residual Covariance		4.02E-08		
Log Likelihood		106.8407		
Log Likelihood (d.f. adjusted)		82.31504		
Akaike Information Criteria		-2.642417		
Schwarz Criteria		-0.567899		

Source: Output of E-View 7.0 2018

The Error Correlation Mechanism result in table 3 demonstrates that the error correlation is appropriately signed and statistically significance at 5% level indicating a long-run equilibrium. The implication is that any shock in the equilibrium relationship will bring in adjustment process that will restore the equilibrium position after a shock. The feedback is demonstrated by the error correction coefficient. As can be seen from table above error correction coefficient value is -0.211635. This implied that about 21 percent feedback is

expected from the past disequilibrium, this demonstrate the speed of the adjustment process. In the other words, ECM coefficient is statistically significant and correctly signs and can be able to play the adjustment role very well.

Table 4: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Probability
OILR does not Granger Cause RGDP	30	1.92744	0.16654
RGDP does not Granger Cause OILR		0.17090	0.84389
NOILR does not Granger Cause RGDP	30	2.33109	0.11795
RGDP does not Granger Cause NOILR		1.08905	0.35197
FGIR does not Granger Cause RGDP	30	3.88730	0.03389
RGDP does not Granger Cause FGIR		0.32700	0.72412
NOILR does not Granger Cause OILR	30	0.39176	0.67995
OILR does not Granger Cause NOILR		1.14170	0.33537
FGIR does not Granger Cause OILR	30	0.70942	0.50157
OILR does not Granger Cause FGIR		0.08576	0.91809
FGIR does not Granger Cause NOILR	30	0.81641	0.45345
NOILR does not Granger Cause FGIR		0.10155	0.90381

Source: Output of E-View 7.0 2018

The results of table 4 indicates that null hypothesis that public revenue does not granger causes)real gross domestic product (RGDP and the null hypothesis that real gross domestic product(RGDP) does not cause granger causes public revenue can be rejected at all levels of statistical significance. This causes the probability values is less than conventional levels of significance. It implies OILR and RGDP have causal relationship. Finding is consistent with the view of (Granger, 1980

Table 5: Regression Results: Long Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OILR	0.011520	0.310529	0.037099	0.9707
NOILR	0.686023	0.264137	6.383130	0.0000
NOILR _{t-1}	0.911199	0.096092	19.88923	0.0000
FGIR	0.037025	0.038388	0.964484	0.3434
C	0.569206	0.498538	13.17695	0.0000
R-squared	0.955838	Mean dependent var		7.2725
Adjusted R-squared	0.949296	S.D. dependent var		1.3417
S.E. of regression	0.302131	Akaike info criterion		0.5866
Sum squared resid	2.464638	Schwarz criterion		0.8157
Log likelihood	-4.386980	F-statistic		146.09
Durbin-Watson stat	2.508281	Prob(F-statistic)		0.0000

Source: Output of E-View 7.0 2018.

$$RGDP_{t-1} = 0.569 + 0.0115OILR + 0.686NOILR + 0.91NOILR_{t-1} + 0.037FGIR + U_t$$

(13.177) (0.037) (6.383) (19.889) (0.965)

$$R^2 = 0.956 \quad \text{Adjusted } R^2 = 0.949 \quad DW = 2.51 \quad F = 146.09$$

From the model above, the parameter shows that viability in real gross domestic product is explained by the independent variables that is public revenue are positively correlated This means that increase in all of these independent variables mentioned above will increases the real gross domestic product which in turn improve the living standard of the citizenry. In this study the calculated vale of 146.09 as against tabulated value of 2.92 which is significant at 5%. It is therefore, concluded that a linear relationship exist between the real gross domestic product and Oil revenue, non-oil revenue and federal government independent revenue.

Based on these findings, the postulations which state that there is no significant relationship between real gross domestic and Oil revenue, Non-oil revenue and Federal government independent revenue is rejected. The evidence established that the independent explanatory variables have individually impacted on the real sector of the economy in Nigeria and in turn served as a means of economic growth.

As show in the model above, in terms of the fitness of the study model, the coefficient of multiple determinations R^2 indicates that about 95% (adjusted R^2 94%) of the variations in RGDP are explained by Oil revenue, non-oil revenue and federal government independent revenue. The F-statistics for the mode above is 146.09; this value is strongly significant at 5% level of significance. The foregoing shows that the explanatory variables are important determinants of RGDP in Nigeria. From this, it is clear that public revenue have contributed greatly to economic growth and development between the periods of 1986 to 2017.

Above all this study examines the impact of public revenue on the economic growth of Nigeria. It showed the relationship between dependent variable (GDP) and independent variable (OILR, NOR and FGIR) in the study. Oil revenue, Non-Oil revenue and Federal independent revenue had a positive impact on the economic growth of Nigeria. The findings of this study are in agreement with the finding of Adegbite, Fakile (2011) and Ojong, Ogar and Arikpo (2016) who concentrated on the Company Income Tax and Nigeria Economic Development. They used Chi-square and Multiple Linear Regression analysis in analyzing the primary and secondary data respectively and concluded that there is a significant relationship between company income tax and Nigerian economic development.

5. Conclusion and Recommendations

The study examined the impact of public revenue on economic growth. Based on the on the results, the study concluded that Oil Revenue and Federal government independent Revenue have positive correlation with Economic Growth though not significant. Implies that government need to do more in terms of value addition through refine oil locally as well as other derivatives obtain from crude oil to create more jobs and wealth in the economy while FGIR, the regulatory authorities charged with the sole responsibility of collecting public revenue should further be strengthened to enforce compliance by taxpayers, so that economic growth can best be felt by ordinary citizens especially in providing basic social amenities as well as infrastructures which is the responsibility of every government. Non-Oil revenue is positively correlated and statistical significant with economic growth. This implies that government economic diversification is on the right direction

Based on the findings, study recommends that government should pay more attention on refine oil locally and strengthened public revenue institutions. On Non-oil revenue

government should continued with diversification strategies at Federal, State and local levels.

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