A SECTORAL ANALYSIS OF THE NIGERIAN AGRICULTURE: AN ALTERNATIVE FOR SUSTAINABLE GROWTH (1981 – 2013)

HAYATUDDIN SAFIYO HAMZA

Abstract: Nigerian Agriculture is one of the most significant sectors of Nigerian economy. The sector comprises of four main sub-sectors as thus; crops production, livestock, fisheries and forestry & wildlife. The study explored the nexus amongst the four main sub-sectors on their individual contributions to the nation's aggregate output. Quarterly time series data from 1981-2013 was used which was sourced from the Central Bank of Nigeria (CBN) annual statistical bulletin and the National Bureau of Statistics. Augmented Dickey-Fuller (ADF) Test was employed to test the stationary properties of the time series data. Result of the Johansen Co-integration test revealed two (2) co-integrating vectors. Thus indicating a long-run relationship between Nigeria Agricultural sub-sectors productivity and Growth Domestic Product (GDP). The Error Correction Term (ECT) indicates 38.57% rate at which the economy will converge to equilibrium quarterly resulting from agriculture sector productivity. Findings also revealed that the crops production sub-sector accounts for the highest contribution of 47.9% in the long-run followed by livestock productivity at 31.33% while the fisheries and forestry sub-sectors have the lowest productivity which might be as a result of uneven resource allocation and distribution in the sectors. Consequently, we recommend the regulatory authority to restructure and diversify the productive base of the agricultural sector, thereby strengthening the weak sub-sectors and enhancing the average ones.

Keywords: Agriculture, Economic Growth, Nigerian Agriculture.

Introduction: Nigerian Agricultural sector is one of the most significant sectors of the economy comprising of four main sub-sectors as thus; crops production, livestock, fisheries and forestry & wildlife sub-sectors. The sector used to be the country's principal foreign earner and highest GDP contributor (60%) in the 1960s but has experienced negligence and over dependence on the oil sector. The agriculture sector remained stagnant during the oil boom decade of the 1970s, which caused a substantial variation in the agriculture contributions to GDP and a long-term decline from 60% in the early 1960s down to 48.8% in the 1970s and to a paltry of 22.2% in the 1980s. However, most of the factors responsible for the decline are unstable and often inappropriate economic policies (of price, trade and exchange rate), the relative neglect of the sector and the negative impact of the oil boom. Since the 1970s, the economy has been characterized by low savings-investment equilibrium (at less than 20%) and low growth trap – resulting in loss of international market shares in its traditional (basically agriculture) exports. Agriculture is the most important non-oil economic activity serving as the single largest employer of labour (70% according to NBS report 2009) and contributed 30.33%, 30.99%, 33.08% and 34.69% of GDP at constant price for the periods 2010, 2011, 2012 and 2013 respectively. It is also the largest non-oil export earner and a key contributor to wealth creation and poverty alleviation – as a large percentage of the population derive their income from agriculture and other related activities.

Nwankwu (1981) defined agriculture which involves the cultivation of land, raising and rearing of animals; for the purpose of production of food for man, feed for animals and raw materials for industries. In a more concise definition it composed forestry and wildlife, fisheries, crops production and livestock. Abellanosa and Pava (1987) considered agriculture to be a deliberate effort to modify a portion of earth's surface through the cultivation of crops and the raising of livestock for sustenance or economic gain. Given by Black (1990), agriculture is the science of cultivating the soil, harvesting crops and raising livestock. It is also engaged with science or art of the production of plants and animals useful to man and in varying degrees, the preparation of such products for man's use and their disposal. Agriculture is also defined by Rimando (2004) as the systematic raising of useful plants and livestock under the management of man. Though, the raising of plants that do not possess characteristics of being useful is regarded not as agriculture. Bareja (2010) defined agriculture as the art and science of growing plants and other crops and the raising of animals for food, other human needs or economic gain. He describes agriculture on the basis that skill is required and thus it is founded on scientifically verified facts which includes specialized disciplines. According to Schumpter (1934), economic growth is defined as a gradual and steady change in the long-run which comes about by a gradual increase in the rate of savings and population. Kindleberger (1965) defined economic growth to mean more output derived from greater amounts of inputs in line with greater efficiency (i.e. an increase in output per unit of input). Kuznets (1966) defined economic growth as a long-term rise in capacity to supply increasingly diverse economic goods to its population, based on advancing technology and institutional as well as ideological adjustments that it demands. According to Maddison (1970), economic growth is defined as the raising of income levels in the rich countries and in poor ones is called development. Friedmann (1972) saw economic growth as an expansion of the system in one or more dimensions without a change in its structure. In other words, it relates to a quantitative sustained increase in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital and volume of trade. As accord to Ott, Ott and Yoo (1975), they defined economic growth as the increase in national income or output over time.

Objectives of The Study:

- To analyze the impact of Nigeria Agriculture Sector to the nation's growth considering its contributions to Gross Domestic Product.
- To examine the long-run effect of each agricultural sub-sector to growth of aggregate output in the economy.
- To identify the level of strength and contribution by each sub-sector to the nation's growth.

Review of Literature: Poonyth et al (2001) , Diao et al (2007), Ehui and Tsigas (2009), Izuchukwu (2011), Olajide et al (2012), Yusuf (2014), and Ahungwa et al (2014) in their works seek to examine the impact of agricultural productivity on economic growth and development. Lawal (2011) and Chidinma and Kemisola (2014) also attempt to investigate government expenditure on agriculture and its impact on economic growth. The efforts of Oyinbo et al (2013) was to examine the relationship between government agriculture budgetary allocation and economic growth. Relationship between agricultural productivity and economic growth was also analyzed by Anyanwu et al (2010) and Awokuse (2009). While majority seek to examine the impact of agriculture on economic growth, Udah et al (2015) in their works attempt to test the impact of agriculture sub-sectors on growth of agricultural sector.

The most commonly used techniques for estimation are categorized as Ordinary Least Square (OLS) and Error Correction Mechanism (ECM).

The Ordinary Least Square (OLS) happens to be the most basic and popularly used method of analysis by most researchers because of its accuracy in prediction. However, it possess a few pitfalls which have to be carefully considered in making analysis. These include the problem of sensitive outliers, independency of data, heteroskedasticity, and wrong choice of dependent and independent variables. It only looks at the linear relationships of dependent and independent variables, as well as the mean of the dependent variable. Despite the aforementioned limitations, Olajide et al (2012), Lawal (2011), Izuchukwu (2011), Chidinma and Kemisola (2014), and Poonyth et al (2001) adopted the technique for their analysis.

Error Correction Model (ECM) is best used to estimate the speed at which a dependent variable converge/adjust to equilibrium. It is not a model that corrects the errors of other models. In that vein, Awokuse (2009) employed the ECM for his analysis. For a researcher/analyst to adopt the Vector Error Correction Model (VECM), one must be familiar with the number of co-integrating equations/relations and must specify and estimate VAR model in integrated multivariate time series. Again, it restricts the convergence of endogenous variables to their co-integrating relationships while allowing a wide range of short-run dynamics. Notwithstanding, we can't compromise the advantages of VECM which is designed for use with non-stationary series that are known to be co-integrated, and as well, captures the relationships among variables both in the short – and – long-run. In that regard, Oyinbo et al (2013) and Yusuf (2014) employed the technique for their analysis.

Ahungwa (2014) and Udah et al (2015) adopted the Log-Linear model in their works, in consideration of its importance to measure the elasticity of the dependent variable with respect to the independent variables(s). From the works of Diao et al (2007) and Ehui and Tsigas (2009), Computable General Equilibrium (CGE) model of Global Trade Analysis Project (GTAP) was used. This is in line with its advantages towards estimating the responsiveness of one variable on another (i.e. measure of elasticities). In the works of Anyanwu et al (2010), correlation matrix was used as the engine of analysis. Although, Correlation matrix is a good measure of the relationship between variables even when the problems of outliers, unequal variance, non-normality, and non-linearity exist. In contrast, it address only the reliability not the validity of features.

Results from the works of Olajide et al (2012), Anyanwu et al (2010), Izuchukwu (2011), Awokuse (2009), Chidinma and Kemisola (2014), Yusuf (2014), Diao et al (2007), Ehui and Tsigas (2009), Ahungwa et al (2014) and Poonyth (2001) all revealed positive findings. Oyinbo et al (2013) and Udah et al (2015) also revealed positive but not significant results. Although, findings from the works of Lawal (2011), indicated a negative outcome.

Methodology: Although some econometric techniques were adopted in formulating a suitable model for the analysis, these include the unit root test, and the co-integration test.

Gujarati et al (2009) made it very clear that a regression could be termed spurious or nonsensical if time series are not stationary. Thus, we can do away with the problem of unit root, by testing the stationary properties of the time series data using Augmented Dickey Fuller (ADF) test.

Suppose the ADF test take the following form for estimation:

$$\Delta Y_t = \gamma + \beta t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \qquad ....(1)$$

where ε_t is a pure white noise error term and $\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2}) = (Y_{t-2} - Y_{t-3})$, etc.

$H_0^* = \delta = \beta = 0$,

where;

$$H_A : \Delta Y_t = \delta Y_{t-1} + \gamma + \beta t + \varepsilon_t \qquad ...\text{(Stationary)}$$

$$H_0 : \Delta Y_t = \gamma + \varepsilon_t \qquad ...\text{(Non-Stationary)}$$

Justification is drawn base on the Mackinon criterion at 5% level of significance. If the computed result is greater than the Mackinon critical values, we reject the null hypothesis and vice versa.

If the series are tested and revealed that the dataset is integrated of first order I(1), then we test for co-integration. Thus, we employed the Johansen Co-integration Approach to test for the number of co-integrating vectors and the pattern of relationship (Johansen 1988).

For the co-integration test, we seek to estimate the number of co-integrating vectors and pattern of relationship between the Nigerian Agricultural sub-sectors and Growth Domestic Product (GDP) using the Johansen Co-integration test. This is given in terms of trace test and Maximum Eigen-value test as:

$$\lambda_{trace}(r) = -T \sum_{i=r=1}^{n} \ln(1 - \hat{\lambda}_i) \qquad ....(2)$$

and

$$\lambda_{\max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1}) \qquad ....(3)$$

where T is the number of observations and $\hat{\lambda}$ denotes the estimated values of the estimated rank of matrix ($\prod$). The Trace Test tests the null hypothesis of r co-integrating vectors against the alternative hypothesis of n co-integrating vectors (i.e. $\lambda_{trace} = 0$ when all $\lambda_i = 0$). The Maximum Eigen test tests the null hypothesis of r co-integrating vectors against the alternative hypothesis of $r+1$ co-integrating vectors. Justification is based on Johansen and Juselius (1990) critical values, where if both trace and maximum eigen statistics are found to be greater than the critical values, we reject the null hypothesis and vice versa.

If the series are stationary of first order and have at least a co-integrating vector, then we will resort to the Vector Error Correction Model (VECM) which entails investigating both the short-run and long-run dynamics of economic growth with regards to the agricultural productivity. Given the stochastic components of the time series, the best technique to adopt for our analysis is the Vector Error Correction Model (VECM). Its properties are given as:

$$\Delta Y_t = C_t + \sum_{i=1}^{k} \Gamma_i \Delta Y_{t-1} + \Pi Y_{t-1} + e_t \qquad ....(4)$$

where; $\Pi = \alpha\beta^1$ and $e_t \approx N(0, \sigma)$

Y_t is a vector of endogenous variables $(n \times 1)$, C_t is a vector of constant intercept $(k \times 1)$, Γ is a matrix of short-run coefficient $(m \times n)$, Y_{t-1} is the lag value of endogenous variables, Π is the long-run response matrix, β is the long-run vector or co-integrating vector, and α is the coefficient of speed of adjustment (i.e. the error correction term which explain the speed of adjustment towards equilibrium).

Although, Y_t ranges as $(Y_{t1}, Y_{t2}, Y_{t3}, ...Y_{tn})$, and α is depicted in a matrix form as;

$$\alpha = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix} \bullet \begin{bmatrix} b_{11} \, b_{12} \\ b_{21} \, b_{22} \\ b_{31} \;\; {}_{32} \end{bmatrix}$$

where $k = 3$ and $r \le k - 1$

Hence, our model for economic growth could be specified as:

$$\begin{bmatrix} \Delta CP \\ \Delta LS \\ \Delta FS \\ \Delta FW \\ \Delta GDP \end{bmatrix} = C_1 + \sum_{i=1}^{k} \Gamma_1 \begin{bmatrix} \Delta CP_{t-1} \\ \Delta LS_{t-1} \\ \Delta FS_{t-1} \\ \Delta FW_{t-1} \end{bmatrix} + \Pi \begin{bmatrix} CP_{t-1} \\ LS_{t-1} \\ FS_{t-1} \\ FW_{t-1} \end{bmatrix} + e_t \qquad ....(5)$$

Where;

GDP = Growth Domestic Product

CP = Crops Production

LS = Livestock

FS = Fisheries

FW = Forestry and Wildlife

It is apparent to understand that the VECM measures both the short-run and long-run relationships between variables. It also captures the speed of adjustment to equilibrium (i.e. how soon the economy returns to equilibrium towards a shock). The Error Correction Term (ECT) further strengthens the long-run relationship if it satisfies the following conditions: (a) the ECT must be negative and statistically significant, (b) it must be less than one (< 1).

Analysis of Result:

Table 1: Result of the Stationarity Test

	ADF		
Variables	**Level**	**1st Diff.**	**OI**
GDP	-1.824615	-3.782579	I(1)
Fisheries	-2.355967	-3.738074	I(1)
Forestry	-0.981555	-3.912028	I(1)
Crops Production	-1.589546	-3.611451	I(1)
Livestock	-1.338177	-3.167553	I(1)

Source: Own Computed

Level of Significance	**Critical Values**
1%	-3.482453
5%	-2.884291
10%	-2.578981

Table 1 above indicates result both at level and at first difference with constant and no trend, and lag lengths based on SIC for ADF. The asymptotic critical values for the test are based on the Mackinnon (1996) computed values. The level result showed that all the variables have unit root (i.e. non-stationary) at all level of significance, and results of first difference indicated that all the series are stationary (i.e. no unit root) except that of livestock which revealed the presence of unit root at 1% level of significance. The difference in terms of conclusion for livestock productivity series may be linked to the different t-statistic adopted in each test.

Table 2: Johansen Co-integration Test

HCE	**Trace Statistic**	**Critical Values**	**Max. Eigen Statistic**	**Critical Values**
CE≤0	100.6805	69.81889	48.20168	33.87687
CE≤1	52.47885	47.85613	27.26511	27.58434
CE≤2	25.21374	29.79707	15.32930	21.13162
CE≤3	9.884441	15.49471	7.412700	14.26460
CE≤4	2.471741	3.841466	2.471741	3.841466

Source: Own Computed

Johansen (1992) test for co-integration was employed to check the presence of co-integration and the number of co-integrating vectors among the series; and the lag length selection criterion was based on SIC – Schwarz Information Criterion and HQ – Hannan-Quinn Information Criterion. Table 2 above, presents the result of the co-integration test taking GDP as the control variable, based on the assumption of a model which include intercept (no trend) in the co-integrating equations and test VAR. The lag intervals was chosen as (1 5). Results of the Trace test and Maximum Eigen test indicated 2 co-integrating equations and 1 co-integrating equation respectively. Although, we choose to use the Trace test of 2 co-integrating equations to estimate our model, which is in line with the sensitivity of the Trace test to test all values so as to capture the number of co-integrating equations, as against the Maximum Eigen test which considers only the maximum value. However, the result is presented based on Mackinnon-Haug-Michelis (1999) critical values at 0.05 level.

Table 3: Result of the Long-run Determinants

Variables	**FS**	**FW**	**CP**	**LS**
GDP	0.0671	0.1083	0.4794	0.3133

Source: Own Computed

Table 3 presents the result of the various components of the Nigerian agricultural sector and their impact on GDP in the long-run. Thus, indicating a unit increase from the output of the fisheries sub-sector is assumed to account for an increase of 0.067 units of the aggregate output of the economy. The contributions from the forestry, crops production and livestock sub-sectors are betokened as 0.108, 0.479 and 0.313 respectively in the long-run. Although, the crops production sub-sector is assumed to constitute the highest contribution to the GDP in the long-run, followed by the livestock sub-sector. This could be attributed relevance and importance expected to be given to Nigeria agriculture though appropriate and consistent policy implementation and/or establishment of new programmes on agriculture during the periods under study.

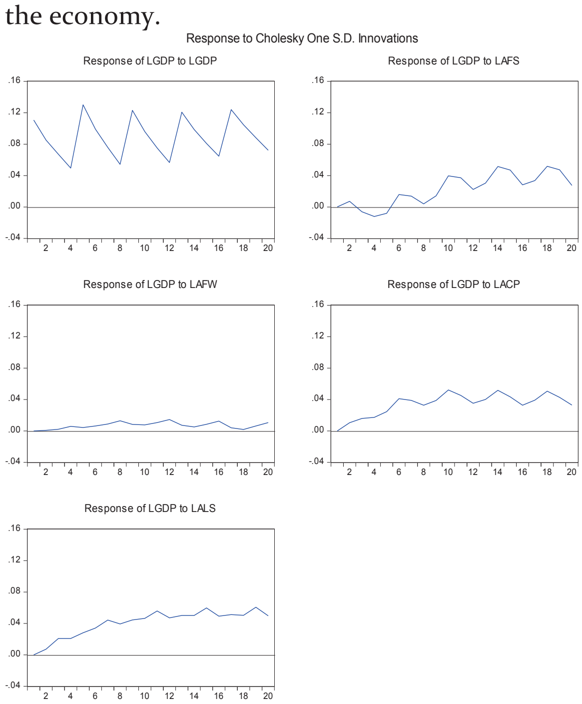
Table 4: Result of the Coefficient of Speed of Adjustment

Equation	**Loading Factor**	**t-Statistics**	**Prob.**	**Lag Length**
GDP	-0.385744	-2.554670	0.0122	5

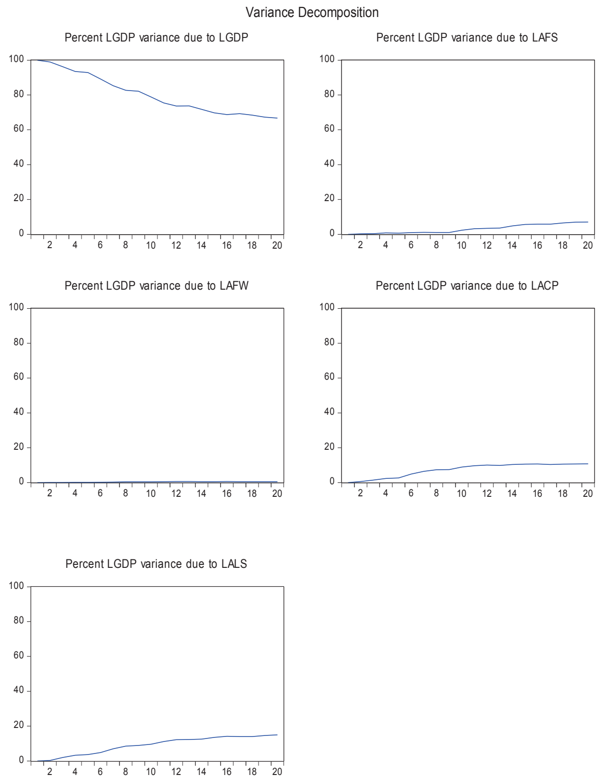
Source: Own Computed

Based on the theoretic assumptions of the coefficient being negative, less than one (< 1), and statistically significant, our result conformed to the theoretic expectations. The result of the short-run dynamics presented on table 4 indicates that the economy will converge to equilibrium in the long-run towards a shock or a change in policy at a rate of 38.57% quarterly.

Impulse Response Function (IRF): The Impulse Response Function (IRF) is used to show the response of a variable following a period shock on itself and other variables. It shows the reaction by depicting the dynamic impacts of the variable on itself and other variables in a particular time horizons into the future. The below diagram shows the response of output (GDP) to a unit shock in itself and other variables under study for a forecast period of twenty quarters. We can conclude that GDP will have a positive impact on itself even where changes and implementation of new policies in Nigeria exists. However, all the changes which will occur during these periods might be the result of shocks in the economy, new policy implementations and/or changes in policy, and other related events. The zero responses of all the variables except GDP will be the result of the starting period. Hence, it is apparent to infer from results presented in table above that any shock on each of the components of the Nigerian agriculture positively affects the aggregate output of the economy.



Forecast Error Variance Decomposition (FEVD): The diagram below revealed the error in forecasting GDP in the first period as 100% attributed to GDP itself, while the other variables - livestock, forestry, fisheries and crops production are 0%. At a time horizon through the forecast periods, the error from GDP on itself will keep declining which will also be reflected and influenced by errors from the other variables under study. We could realize from the result that the variations from all the sub-sectors on GDP will be increasing resulting to a decline from the error of GDP on itself as at the end forecast quarter.



It is apparent from the diagram above that the livestock sub-sector will record the highest outcome in variation attributed to the aggregate output in the economy during the period under study after the variation from GDP itself. Also in the long-run, the crops production sub-sector will be next in error contributions to variation on GDP, followed by fisheries and forestry subsectors. We could infer from our result that though all the variables contribute to the error variation on GDP, more error was attributed to livestock productivity after GDP.

Summary of Findings: Results of the analysis revealed that both GDP and agricultural components relate in the long-run, with crops production sub-sector depicting highest contribution of 47.94% to GDP, followed by livestock (31.33%), forestry (10.8%) and fisheries (6.7%).

1. It also confirmed that contributions from all the sub-sectors put together drive the economy to equilibrium at the rate of 38.57% quarterly. This indicates that before the end of the third quarter the economy will attain a steady state.
2. The estimation result shows that productivity in fisheries sub-sector impacts negatively on the aggregate output of the economy in the short-run, while others revealed positive impact.
3. The results further revealed a positive impact from all the components of agriculture on GDP during the mid-term through the long-term.

Policy Recommendations: Government should restructure and diversify the productive base of the economy. Primarily by way of diversification of expenditure to agriculture sector, so as to reduce dependency on the oil sector and imports.

1. Private sector involvement should be encouraged in order to boost the agricultural and agro-processing businesses – thereby raising the production potentials of export and agricultural inputs for industry.
2. There is also need for technological revolution in the sector to promote the use of modern technology for optimal output.
3. New research institutions should be established and old ones be rehabilitated – thus providing adequate and modern infrastructure for research and development. This will therefore go a long way in providing good yield potential and quality feeds for all the sub-component of agriculture; developing and promoting mechanized farming through manufacturing tools, importing machinery and training farmers; good uptake of research results and reliable planning statistics.
4. Lastly, it is important to encourage the engagement of the rural populace in the development process through employment generation, improving rural quality of life – like poverty reduction/alleviation, provision of rural infrastructure, as well as environmental protection.

References:

1. A. Umar, and A. A. Zubairu, "An Empirical Analysis of the Contribution of Agriculture and Petroleum Sector to the Growth and Development of the Nigerian Economy". International Journal of Social Science and Education. Vol.2, Iss.4, ISSN:2223-4934E and 2227-393XPrint, 2012.
2. Adesina, "Agricultural Transformation Agenda: Repositioning Agriculture to Drive Nigeria's Economy". Federal Ministry of Agriculture and Rural Development. (2012).
3. B. Lennart, et al "Agriculture and Economic Development". The Magazine of United Nations Environment Programme. UNEP Special Edition. 2006.
4. Amit Phillora , Rehmath Shareef, Development and Restructuring of Higher; Business Sciences International Research Journal ISSN 2321 – 3191 Vol 2 Issue 1 (2014), Pg 86-88
5. B. N. Heino, "Non-Stationary Time Series and Unit Root Tests". 2005.
6. C. M. Anyanwu, "The Role of Monetary Policy in Achieving Nigeria's Vision 2020 Agenda". Research Department, Central Bank of Nigeria. 2008
7. Comprehensive Africa Agriculture Development Programme, "New Partnership for Africa's Development (NEPAD)". ISBN:0-620-30700-5, 2003.
8. D. J. Ott, A. F. Ott, and J. H. Yoo, "Macroeconomic Theory", International Student Edition. McGraw-Hill International Book Company. 1975.
9. D. N. Gujarati, D. C. Porter, and S. Gunasekar, "Basic Econometrics", Fifth Edition. Tata McGraw-Hill Education Pvt Ltd. 2009.
10. D. Poonyth, R. Hassan, J. F. Kirsten, and M. Calcaterra, "Is Agricultural Sector Growth a Precondition for Economic Growth? The Case of South Africa. Department of Agricultural Economics, Extension and Rural Development. University of Pretoria (Working Paper). 2001.
11. E. Chidinma, and C. O. Kemisola, "Government Expenditure on Agriculture and Economic Growth in Nigeria". International Journal of Science and Research. Vol.3, No.358, 2012.
12. E. H. Bruce, "Econometrics". Revised Edition. University of Wisconsin. 2013.
13. G. S. Gupta, "Macroeconomics Theory and Applications", Tata McGraw-Hill Publishing Company Ltd. 2001.
14. G. S. Maddala, "Introduction to Econometrics". Second Edition. Macmillan Publishing Company. 1992.
15. G. T. Ahungwa, U. Haruna, and Y. A. Rakiya, "Trend Analysis of the Contribution of Agriculture to the Gross Domestic Product of Nigeria (1960 – 2012)". Journal of Agriculture and Veterinary Science. Vol.7, Iss.1, 2014, pp. 50 – 55
16. H. Erik, and O. Par, "Testing for Co-integration Using the Johansen Methodology when Variables are Near-Integrated". IMF (Working Paper). 2007.
17. H. L. Bhatia, "History of Economic Thought" Second Edition. Vikas Publishing House Pvt Ltd. 1992.
18. J. O. Aiyedogbon, "Agricultural Productivity and Employment Generation in Nigeria: Re-Examination of Evidence". Journal of Entrepreneurship Research Vol.3, No.1, 2013.
19. L. L. Saweda, O. Kuku, and A. Ajibola, "A Review of Literature on Agricultural Productivity, Social Capital and Food Security in Nigeria". Nigeria Strategy Support Program (Working Paper) No.21, 2011.
20. Kathak Mehta, Bindi Mehta, The Budding Entrepreneurial Ecosystem in; Business Sciences International Research Journal ISSN 2321 – 3191 Vol 2 Issue 1 (2014), Pg 89-98
21. M. B. John, T. E. Bradley, and J. L. Gerald, "Understanding Macroeconomic Theory" Special Indian Edition. Routledge Taylor and Francis Group, New York and London. 2008.

22. M. C. Vaish, "Macroeconomic Theory", Thirteenth Revised Edition. Vikas Publishing House Pvt Ltd. 2009
23. M. L. Jhingan, "Macroeconomic Theory" Twelfth Enlarged Edition. Vrinda Publications Pvt LTD. 2010.
24. M. L. Jhingan, "The Economics of Development and Planning", Fourty Revised and Enlarged Edition. Vrinda Publications Pvt LTD. 2011.
25. NBS/CADP Baseline Survey Report, "National Bureau of Statistics (NBS) – Commercial Agriculture Development Project (CADP)". 2010.
26. O. Izuchukwu, "Analysis of the Contribution of Agricultural Sector on the Nigerian Economic Development". World Review of Business Research. Vol.1, No.1, pp. 191 – 200, 2011.
27. Arya Nair, Sarath.P, Manikandan, K., Work Engagement and Burnout Among; Business Sciences International Research Journal ISSN 2321 – 3191 Vol 2 Issue 1 (2014), Pg 99-104
28. O. Oyinbo, A. Zakari, and G. Z. Rekwot, "Agricultural Budgetary Allocation and Economic Growth in Nigeria: Implications for Agricultural Transformation in Nigeria". The Journal of Sustainable Development. Vol.10, Iss.1, pp. 16 – 27, 2013.
29. O. T. Olajide, B. H. Akinlabi, and A. A. Tijani, "Agriculture Resource and Economic Growth in Nigeria". European Scientific Journal. Vol.8, No.22, ISSN: 1857-7881, 2012.
30. S. A. Yusuf, "Role of Agriculture in Economic Growth and Development: Nigeria Perspective". Munich Personal RePEc Archive. No.55536, 2014.
31. S. Adam, "The Dynamics of Socio-Economic Development: An Introduction". Cambridge University Press. 2005.
32. S. C. Udah, I. N. Nwachukwu, A. C. Nwosu, J. A. Mbanasor, and S. B. Akpan, "Analysis of Contribution of Various Agricultural Subsectors to Growth in Nigeria Agricultural Sector". International Journal of Agriculture, Forestry and Fisheries. Vol.3, No.3, pp. 80 – 86, 2015.
33. S. Ehui, and M. Tsigas, "The Role of Agriculture in Nigeria's Economic Growth: A General Equilibrium Analysis". African Journal of Agricultural and Resource Economics. 2009.
34. Vinaya.L, Dr.Sureshramana Mayya, Review of Performance, Magnitude and Growth; Business Sciences International Research Journal ISSN 2321 – 3191 Vol 2 Issue 1 (2014), Pg 67-72
35. S. O. Anyawu, U. C. Ibekwe, and O. M. Adesope, "Agriculture Share of the Gross Domestic Product and Its Implications for Rural Development". Report and Opinion. Vol.2, Iss.8, 2010.
36. S. S. Dhillon, "Agricultural Geography". Third Edition. Tata McGraw-Hill Education. 2004.
37. T. O. Awokuse, "Does Agriculture Really Matter for Economic Growth in Developing Countries?" American Agricultural Economics Association Annual Meeting. 2009.
38. V. Sarasin, "Agribusiness Management Towards Strengthening Agricultural Development and Trade: Challenges for Thailand in Agribusiness Development". International Symposium. Chiang University. 2001.
39. W. A. Lawal, "An Analysis of Government Spending on Agricultural Sector and Its Contribution to Gross Domestic Product in Nigeria". International Journal of Business and Social Science. Vol.2, No.20, 2011.
40. W. N. George, A. Jeffrey, and A. M. William, "The Economics of Agricultural Development: World Food Systems and Resource Use". Routledge. 2014.
41. X. Diao, P. Hazell, D. Resnick, and J. Thurlow, "The Role of Agriculture in Development: Implications for Sub-Saharan Africa", International Food Policy Research Institute. No.153, 2007.
42. Lakshmi Parthan, A Study on the Impact of Leadership; Business Sciences International Research Journal ISSN 2321 – 3191 Vol 2 Issue 1 (2014), Pg 81-85

***

Hayatuddin Safiyo Hamza/ M. Sc. Student/ SRM University/ Chennai-India/