**AGRICULTURAL DEVELOPMENT AS PREDICTORS FOR SUSTAINABLE EMPLOYMENT CREATION IN NIGERIA**

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**ABSTRACT**

*This study examined agricultural development as predictors for sustainable employment creation in Nigeria spanning between 1990 and 2021. Secondary method of data collection and econometrics techniques were used. Ex-post facto research design was adopted. The estimation technique of the study made used of econometric procedure. OLS and co-integration analysis were employed in obtaining the numerical estimates of the coefficient of the model formulated above with application of E-views software statistical package. Statistical and econometric tools are used as evaluation techniques, these include: standard error, t-test, R-square, F-test and Durbin Watson statistics. Co-integration was used for testing the existence of a long run relationship among variables. The findings of the study revealed that if all things being equal, agricultural development and government expenditure on agricultural development might serve as predictors for solving the challenges of sustainable employment creation in Nigeria. It was also indicated that agricultural development and government expenditure on agricultural development positively influence sustainable employment creation in Nigeria. The findings further showed that there was significant long run relationship between agricultural development, government expenditure on agricultural development and sustainable employment creation in Nigeria. It was recommended that government at all level in Nigeria (federal, state and local governments) should increases expenditure on the agricultural sector. The government should remove every constraint to agricultural policy effectiveness, such as policy instability, policy inconsistencies, narrow-based policy formulation, poor policy implementation and weak institutional framework for policy coordination.*

**Keywords: Agricultural Development, Predictors, Sustainability, Employment Creation, Nigeria.**

**INTRODUCTION**

The current situation of unemployment in Nigeria is pathetic and a major concern to government and stakeholders in the economy of Nigeria. One may begins to wonder the continuous increase in the unemployment rate in the country. Every countries of the world are seeking for ways to ensure drastically reduction in unemployment rate in exchange for sustainable employment creation. Sustainable employment creation means ability or process of achieving living and working conditions that can support people in engaging and remaining in work throughout an extended working life. Korgbeelo (2021) argued that sustainable employment creation through economic development is generally accompanied by agricultural sector development. Agriculture plays a vital role in the development process of any country. It is an important sector that stimulates the development and industrialization of many countries and equally plays a big role in job creation. The development of the agricultural sector is crucial for the attainment of food security, income and employment generation, and for stimulating industrialization, and indeed the overall development of a country. The technological progress made by the advanced countries of the world had its beginnings in agriculture (Ogbalubi & Wokocha, 2013; Ogbanga, 2018).

Indeed, the role of agriculture in the development of a country can hardly be overemphasized. In Nigeria before independence and even up to the first post-independent decade, the agricultural sector was the highest contributor to the country’s Gross Domestic Product (GDP) and also the highest employer of labour. However, since the 1970s, the contribution of the agricultural sector to the economy has declined due to the oil syndrome which resulted in the neglect of the once vibrant agricultural sector (Anyanwu, Oyefusi, Oaikhenan & Dimowo, 1997). Hence, the agricultural sector that was once the mainstay of the economy and the largest employer of labour is no longer what it used to be (Olukemi, 2018). Agriculture, a mainstay of the African economy is a unifying trait that doubles as the destination sector for regional integration and trade expansion. The regional ecosystem has placed agriculture as cardinal to the development of most countries in the African continent with enormous potentials for sustainable economic growth and export promotion (Asogwa & Onyegbulam, 2021). African Development Bank in Asogwa and Onyegbulam (2021) revealed a burgeoning population of agriculturists in Africa who are employed by the different nodes of the Agri systems and food value chain. For instance, the World Bank (2018) indicated that 65%, 68%, and 70% of Nigerians, Tanzanians, and Cameroonians are directly or indirectly employed in the agricultural sector respectively. Data from World Bank (2017) also showed that in 2017, the percentage contribution of agriculture and related activities to gross domestic product stood at 25%, 29%, and 17% for the three countries, respectively.

Despite a large expanse of arable land and a high proportion of the population engaged in agriculture, most African countries continue to import a high percentage of food and other agricultural product from abroad. Furthermore, the African continent spends about US$35 billion every year to buy food and agricultural imports to buffer the gap posed by lack of food self-sufﬁciency from its aggregated yearly outputs. Import accounts for about 1.7 times the value of its export. Also, between 1998 and 2007, total net food imports grew at an average of 3.4% annually (Woldemichael, Salami, Mukasa, Simpasa, & Shimeles, 2017). Likewise, participants in the agricultural sector have been operating at less than full capacity both in labor potential and resource deposit. It is in this light that Dieye (2016) stated that unless agriculture is fully transformed, Africa will remain trapped in a low productivity cycle. This implies that the region will lack the capacity to drive agricultural value-added output which could improve the local manufacturing sector and encourage employment and diverse livelihood opportunities for a youthful and growing population.

Studies such as Ogbanga (2018) examined Agricultural Development and employment generation in Nigeria and found that agricultural sector and other explanatory variables contribute significantly to employment generation in Nigeria. Korgbeelo (2021) examined the impact of agricultural sector performance on job creation in Nigeria and found that crop production output significantly reduces unemployment in Nigeria while livestock and fishery outputs have weak reducing effect on unemployment in Nigeria. Aderemi, Abalaba, Adeniran and Amadi (2020) investigated the role of agriculture in generating employment in post SAP era Nigeria and concluded that agricultural sector contributed to employment generation in the country, though not significant in the post SAP era. Asogwa and Onyegbulam (2021) examined the extent to which agricultural value-added output translates to employment creation and regional integration in sub-Saharan Africa. Evidence from the study revealed that increased agricultural value-added output reduced unemployment by 0.102%, while regional integration increased by 0.441%. Austine, James, Felix and Folorunso (2020) examined the effect of agricultural development on unemployment reduction in Nigeria and the findings indicated Granger causality result showed a bi-directional causation between the variables of the study.

**Statement of the Problem**

Unemployment is one of the serious macroeconomic problems troubling Nigeria today. It is also true that the agricultural sector in Nigeria is endowed with the potential to create jobs and reduce unemployment in the country. But despite this huge job creation potential of the sector, the country is still experiencing high and rising levels of unemployment. The reason is that the potential of the agricultural sector has not been adequately harnessed due to several factors acting as impediments. Some of these factors include lack of credit facilities, lack of modern storage facilities and rural-urban migration of our able-bodied youths, among others. The argument, therefore, is that, if these problems are resolved to a reasonable extent, the capacity of the sector to create jobs will improve. This can be achieved by formulating and implementing sound policies and programmes. But such policies and programmes need to be based on empirical evidence. It is against this backdrop that motivates this study in examining agricultural development as predictors for sustainable employment creation in Nigeria.

**Objectives of the Study**

The main objective of the study was to examine agricultural development as predictors for sustainable employment creation in Nigeria. Specifically, the study sought to:

1. Examine the extent to which agricultural development as measure by output predicts sustainable employment creation in Nigeria.
2. Determine the extent to which government expenditure on agriculture predicts sustainable employment creation in Nigeria.
3. Long run relationship between agricultural development, government expenditure on agriculture and sustainable employment creation in Nigeria.

**Hypotheses**

The following null hypotheses were tested in this study:

**H01**: There is no significant influence of agricultural development on the sustainable employment creation in Nigeria.

**H02**: There is no significant influence of government expenditure on agriculture on the sustainable employment creation in Nigeria.

**H03**: There is no significant long run relationship between agricultural development, government expenditure on agriculture and sustainable employment creation in Nigeria.

**Methodology**

This study used ex-post facto research design. The justification for using this type of research design is that it’s the kind of research design that helps to measure the relationship and impact of independent variables on dependent variable. The study is based on secondary methods of data collection. The data were collected from Central Bank of Nigeria (CBN) and IndexMundi. Following the study carried out by Ogbanga (2018) who have examined agricultural development and employment generation in Nigeria with the following model:

EMPT = f (AGQ, GDP, FPC, PEX, INQ).............................................................. 1

Where: EMPT = Total Employment; AGQ = Total Agricultural Output; GDP = Real Gross Domestic Product; FPC = Foreign Private Capital (a proxy for Foreign Direct Investment) PEX = Public Expenditure INQ = Industrial sector output. In order to achieve objectives of the study, the above model 1 was modified as follows:

SEMCR = f(AGDD, GEXA) .................................................................................. 2

SEMCR = a + b AGDD + c GEXA + e.................................................................... 3

Where:

SEMCR = Sustainable employment creation

AGDD = Agricultural development

GEXA = Government expenditure on agricultural development

a, b, c = Parameters to be estimated

e = Stochastic term

AGDD > 0........................................................................................................... 4

GEXA > 0........................................................................................................... 5

The estimation technique of the study made used of econometric procedure. OLS and co-integration analysis were employed in obtaining the numerical estimates of the coefficient of the model formulated above with application of E-views software statistical package. Statistical and econometric tools are used as evaluation techniques, these include: standard error, t-test, R-square, F-test and Durbin Watson statistics. The standard error is used to test the statistical significance of the parameter estimates whether they are significantly different from zero. The rule of thumb guiding standard error is that, for statistical significant to be ascertained, the standard error of the parameter estimate must be less than half of the parameter estimate i.e. (SE bo < ½ bo). When this happens, we are to accept the alternative hypothesis and reject the null hypothesis and vice versa. Also, the t-test is used to test the individual statistical significance of the estimated parameter at a certain level of significance usually 5%. The rule of thumb guiding the t-test states that for statistical significance to be established, the t-test calculated must be greater than the t-test tabulated or the theoretical value at 5% level of significance. When the t-statistic is greater than the critical value, we are to accept the alternative hypothesis and reject the null hypothesis and also if the critical value is greater than t-statistic we are to accept the null hypothesis. Further, R-squared is used to test the measure of goodness of fit of the model. If R-squared is less than 50%, it shows that the model has a poor fit and vice versa. Moreover, F-statistics is used to test the joint statistical significance of the explanatory variables and the dependent variable. When F-calculated is greater than F- critical, it shows that there is a joint significant relationship and vice versa. Finally, an econometric criterion is used to test the presence or absence of positive correlation. The economic measurement used for this, is Durbin Watson Statistics. If Durbin Watson statistics falls between O and 2 but not approximately 2. This implies that there is presence of positive serial correlation whereas if approximately 2 or above 2, there is absence of positive serial correlation. If the value is greater than 2, there is evidence of negative serial correlation.

Co-integration test is a test for testing the existence of a long run relationship among variables. The basic idea behind co integration is that if, in the long-run, two or more series move closely together. Even though the series themselves are trended. The difference between them is constant. It is possible to regard these series as defining a long-run equilibrium relationship, as the difference between them is stationary. If this test established that at least one co-integration vector exist among the variable under investigation, then a long-run equilibrium relationship exist among the variables. A lack of co-integration suggests that such variables have no long-run relationship.

**Results and Discussion**

**Table 1: OLS results on the influence of agricultural development on the sustainable employment creation in Nigeria**

|  |  |  |
| --- | --- | --- |
| Dependent Variable: SEMCR |  |  |
| Method: Least Squares |  |  |
| Date: 03/19/23 Time: 19:21 |  |  |
| Sample: 1990 2021 |  |  |
| Included observations: 32 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| AGDD | 0.100539 | 0.042079 | 2.389275 | 0.0236 |
| GEXA | 0.226270 | 0.375011 | 0.603368 | 0.5510 |
| C | 43.89756 | 1.052456 | 41.70963 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.171887 |     Mean dependent var | 46.44438 |
| Adjusted R-squared | 0.114776 |     S.D. dependent var | 0.938186 |
| S.E. of regression | 0.882705 |     Akaike info criterion | 2.677408 |
| Sum squared resid | 22.59587 |     Schwarz criterion | 2.814821 |
| Log likelihood | -39.83853 |     Hannan-Quinn criter. | 2.722957 |
| F-statistic | 3.009694 |     Durbin-Watson stat | 0.197629 |
| Prob(F-statistic) | 0.064908 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Source: E-views

From the regression result on table 1 above, the coefficient of the estimate parameters for agricultural development is 0.100539. The result revealed that there was direct relationship between agricultural development and sustainable employment generation in Nigeria. This implies that about 0.100539 increases in sustainable employment generation could be attributed towards agricultural development in Nigeria. The standard error of agricultural development is 0.042079 while half of the coefficient of the variable is (1/2 x0.100539 *=* 0.0502695). Using the rule of thumb, since the half of the coefficient of the variable 0.0502695is greater than the standard error of the coefficient 0.042079, the variable (agricultural development) it is statistically significant. The t-statistics calculated for agricultural development is 2.389275 while the t-statistics from the table (critical t-test) is 1.77 at 5% level of significance. Since the t-calculated 2.389275 is greater than the t-table (1.77) at *5%* degree of freedom, it is statistically significant. This implies that null hypothesis was rejected and that there was significant influence of agricultural development on the sustainable employment creation in Nigeria.

The coefficient of the estimate parameters for government expenditure on agricultural development is 0.226270. The result indicated that there was positive relationship between government expenditure on agricultural development and sustainable employment creation in Nigeria. This implies that about 0.226270 increases in sustainable employment creation could be attributed towards government expenditure on agricultural development in Nigeria. The standard error of the variable is 0.375011 while half of the coefficient of the variable is (1/2 x0.226270 *=* 0.113135). Using the rule of thumb, since the half of the coefficient of the variable 0.113135 is less than the standard error of the coefficient 0.375011, it is statistically insignificant. The t-statistics calculated for government expenditure on agricultural development is 0.603368 while the t-statistics from the table (critical t-test) is 1.77 at 5% level of significance. Since the t-calculated 0.603368 is less than the t-table (1.77) at *5%* degree of freedom, it is statistically insignificant. This implies that null hypothesis was accepted and that there was no significant influence of government expenditure on agriculture on the sustainable employment creation in Nigeria

The coefficient of determination (R2) which measured joint impact of independent variables on dependent variable is 0.171887 which is approximately equal to 17% which indicates a weak positive relationship. This implies that the regression lines have a weak fit of measure and that the explanatory variables which are agricultural development and government expenditure on agricultural development accounts for about 17*%* variation on the dependent variable (sustainable employment creation). Whereas, the remaining 83% cannot be explained by the explanatory variables and those 83% variations are other impact that could affects sustainable employment creation in the Nigerian economy which were not captured on the content of the model.

The f-statistics also measured the joint variation between dependent and independent variables. The f-statistics calculated is 3.009694 while that f-statistics from the table is 1.986 at *5%* degree of freedom. Since f-statistics calculated is greater than f-statistics from the table (3.009694 *>* 1.986), thus, it is statistically significant and rejection of null hypothesis. The Durbin Watson statistics calculated is 0.197629 which approximately equal to 0.19. This shows that there is serial auto-correlation in the model formulated.

**Table 2: Co-integration results on the long run relationship between agricultural development, government expenditure on agriculture and sustainable employment creation in Nigeria**

|  |
| --- |
| **Part 1: Trace Statistics** |
| **Null Hypothesis** | **Alternative Hypothesis** |

|  |
| --- |
| **Test Statistic** |

 |

|  |
| --- |
| **Critical Value (5%)** |

 | **Probability** |
| $$H\_{0}:r=0$$ | $$H\_{1}:r=<0$$ |  61.31138 |  47.85613 |  0.0017\*\*\* |
| $$H\_{0}:r=1$$ | $$H\_{1}:r=<1$$ |  33.66220 |  29.79707 |  0.0171\*\*\* |
| $$H\_{0}:r=2$$ | $$H\_{1}:r=<2$$ |  13.98901 |  15.49471 |  0.0832 |
| $$H\_{0}:r=3$$ | $$H\_{1}:r=<3$$ |  0.525000 |  3.841466 |  0.4687 |
| **Part 2: Maximal Eigen Value Statistics** |
| **Null Hypothesis** | **Alternative Hypothesis** |

|  |
| --- |
| **Test Statistic** |

 |

|  |
| --- |
| **Critical Value (5%)** |

 | **Probability** |
| $$H\_{0}:r=0$$ | $$H\_{0}:r=1$$ |  27.64918 |  27.58434 |  0.0491\*\*\* |
| $$H\_{0}:r=1$$ | $$H\_{0}:r=2$$ |  19.67319 |  21.13162 |  0.0790 |
| $$H\_{0}:r=2$$ | $$H\_{0}:r=3$$ |  13.46401 |  14.26460 |  0.0666 |
| $$H\_{0}:r=3$$ | $$H\_{0}:r=4$$ |  0.525000 |  3.841466 |  0.4687 |

Source: Author’s Computation

According to the rule guiding Johansen Co-integration Test, we make decision by the result of Trace Statistics and the Max-eigen test, but when the result of this two test differs, we make use of the result from Trace Statistics. The trace statistics test result shows that there are (2) long-run equilibrium relationships between the variables respectively and the probability of the trace statistics also confirm it because their values are lesser than 5%. The Max-Eigen test also confirm there is (1) long-run equilibrium relationship between the variables. The co-integration test result as evident in table 2 indicates that the dependent variable sustainable employment creation is co-integrated with agricultural development and government expenditure on agricultural development; as such the test statistics strongly reject the null hypothesis. Thus, it was concluded that there was significant long run relationship between agricultural development, government expenditure on agriculture and sustainable employment creation in Nigeria.

**Discussion of Findings**

The findings of the study revealed that agricultural development and government expenditure on agriculture positively influence sustainable employment creation in Nigeria. The findings also indicated that there was significant long run relationship between agricultural development, government expenditure on agriculture and sustainable employment creation in Nigeria. These findings correlate with Ogbanga (2018) who found that agricultural growth and development directly help government in solving the challenges of unemployment as well as Korgbeelo (2021) who examined the impact of agricultural sector performance on job creation in Nigeria and found that crop production output significantly reduces unemployment in Nigeria while livestock and fishery outputs have weak reducing effect on unemployment in Nigeria. Aderemi, Abalaba, Adeniran and Amadi (2020) investigated the role of agriculture in generating employment in post SAP era Nigeria and concluded that agricultural sector contributed to employment generation in the country, though not significant in the post SAP era. Asogwa and Onyegbulam (2021) examined the extent to which agricultural value-added output translates to employment creation and regional integration in sub-Saharan Africa. Evidence from the study revealed that increased agricultural value-added output reduced unemployment by 0.102%, while regional integration increased by 0.441%. Austine, James, Felix and Folorunso (2020) examined the effect of agricultural development on unemployment reduction in Nigeria and the findings indicated Granger causality result showed a bi-directional causation between the variables of the study.

**Conclusion and Recommendations**

This study examined agricultural development as predictors for sustainable employment creation in Nigeria using secondary method of data collection and econometrics techniques. The study concluded that, if all things being equal, agricultural development and government expenditure on agricultural development might serve as predictors for solving the challenges of sustainable employment creation in Nigeria. Based on these findings, the following recommendations are provided:

1. Government at all level in Nigeria (federal, state and local governments) should increases expenditure on the agricultural sector.
2. The government should remove every constraint to agricultural policy effectiveness, such as policy instability, policy inconsistencies, narrow-based policy formulation, poor policy implementation and weak institutional framework for policy coordination.
3. The government of Nigeria should develop policies that could improve agricultural activities in Nigeria. These policies could increase credit policies for agricultural purposes, strengthening of the agricultural product marketing board to encourage farmers.
4. This study identified the activities of foreign investors as a determinant of employment. Therefore, government should intensify more effort in creating an enabling environment for foreign investment in Nigeria.
5. Government should also create an enabling environment for industrial activities. This environment should include credit policies and interest rate policies that could encourage borrowing for investment. Also, social amenities in the form of electricity, pipe born water, roads and securities are necessary to encourage industrialization in Nigeria

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