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Green Entrepreneurship and Sustainable Development in Kogi State, Nigeria

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Abstract
This study titled: green entrepreneurship and sustainable development in Kogi State is written to examine the effect of green entrepreneurship on sustainable development in Kogi State North-Central Nigeria. The population of the study comprises of all entrepreneurs who engages in green businesses in Kogi state. However, the population is infinite considering its informal nature and mobility hence the study adopted the Topman sample size statistical formula to reach respondents numbering 246 through a structured questionnaire but only 212 respondents completed and returned their questionnaire given 86% retrieval rate. Pilot study was conducted using a test re-test method and tested using Cronbach alpha to establish the reliability of the instrument. Validity of the instrument was conducted using content and face methods moderated by two experts. More so, survey research design was adopted, and the statistical tools used comprised descriptive and inferential statistics, hypotheses were tested using linear regression analysis. Findings revealed that there was a significant positive relationship between green business initiative and poverty reduction (r = .853, p-value <0.05), there was a significant positive relationship between agro- tourism and economic growth (r = .584, p-value <0.05), that there was a significant positive relationship between ecological economy and sustainable modern energy (r =.574, p-value <0.05 and there was a significant positive relationship between carbon economy and sustainable consumption (r = .842, p-value <0.05). In view of the findings, the study concluded that there was significant positive relationship between green entrepreneurship and sustainable development in Kogi state. Premised on the findings the study therefore recommended that green entrepreneurship practices should be improved and periodic review be carried out in order to attain sustainable development.

Keywords: *Green, Entrepreneurship, Sustainable, Development*

Introduction

Sustainable economic development is the main focus of nations across the globe. This focus is anchored on enabling most member states of the United Nations General Assembly to attain the seventeen (17) Sustainable Development Goals (SDGs) by the year 2030. These SDG goals are seen as the most economic, social, demographic and humanitarian programmes that would guarantee good living, economic and social wellbeing of the citizens as well as promotion of equity and peace among member states. Nigeria is a member state and had been pursuing these SDGs goals since it was launched in 2015 thereby all states within the Nigerian nation have also consciously initiated policies and programmes towards attaining these goals. Kogi State is known as the Confluence state because of the meeting of rivers Niger and Benue in the Lokoja, the state capital. The state is also one of the states in North-Central and sometimes called the middle-belt region. Kogi state is blessed with abundant natural resources and according to World Bank Group (2019) has a total population of four million five hundred thousand and the presence of the gigantic Ajaokuta steel company limited, west African ceramics limited baron Nitrode (BN) ceramic, Itakpe Iron Ore, Obajana Cement Plc etc. thus, making the state one of the most attractive states in North Central region because of these endowments. More so, the strategic location of Kogi State and proximity to the Federal Capital

Territory (FCT) gives it an edge for investment and urbanization above other states within the region. Though, Kogi State with its population is ranked 13th out of the 36 states of the Federation, has a total land mass of 29,833 sq km make the state attract more potential for economic development. However, despite these opportunities and the state pursuing the SDG goals it has not been able to tackle the problem of poverty, pursuance of sustainable energy, sustainable economic growth as well as sustainable consumption (Notton *et al* & Nipuni *et al.,* 2021). This implies that the state still yeans for social economic development implying that aggressive steps are required to accomplish this. Nigeria is the most populous nation in Africa which according to World Bank Group (2019) has a total population of 195.9 million thus making it the largest consumer economy in Africa hence, attracting entrepreneurs within and outside the nation. However, most of these entrepreneurs anchored their ideas on "business as usual" approach characterized with profit motive thereby aggravating the threat of planet earth integrity. This therefore, adversely affects the national sustainable development and the achievement of Sustainable Development Goals projects (Ploum et al 2018, Muo & Adebayo, 2019). Hence, the need for green entrepreneurial practices which is seen as conducting businesses in environmentally friendly manner or going into green business operations. This is aimed at attaining sustainable development (SD) through integrating ecological and economic firms' objectives, reduction of green-house gas emission and mitigating effects of climate change.

Therefore, entrepreneurship which is seen as the driving force of economic and social development of the citizens is the focus towards addressing the hazards associated with the aforementioned socio-economic challenges in the state. To this end, Stuti (2019) noted that green entrepreneurship is seen as the conscious application on of agricultural activities in the most environmentally friendly manner and or going into green business is manifested through green business initiatives, agro-tourism, iconological economy as well as carbon economy. This implies that effective application of agribusinesses and green entrepreneurial practices could serve as an antidote towards addressing the socio-economic challenges in the state.

Statement of Hypotheses

Consequent upon the research objectives and research questions the study formulates the following research hypotheses in their null form to guide the research:

H_1: There is no significant relationship between green business initiative and poverty reduction in Kogi State.

H_2: There is no significant relationship between agro-tourism and economic growth in Kogi state.

H_3: There is no significant relationship between ecological economy and sustainable modern energy in Kogi state.

H_4: There is no significant relationship between carbon economy and sustainable consumption in Kogi state.

Conceptual Literature

This section discusses the related concept bothering on both the independent and dependent variable, specifically, the independent variable is green entrepreneurship and decomposed with green business initiative, agro-tourism, ecological economy and carbon economy. More so, the dependent variable is sustainable economic development which is decomposed with the relevant Sustainable

Development Goals number one that is, end poverty: Number seven sustainable and modern energy for all, goal number eight: sustainable economic growth and goal number eight: sustainable consumption.

Entrepreneurship

Entrepreneurship is seen as a process of identifying business opportunities and consciously converting such opportunities into profitable venture in forms of creation of goods or provision of services (Ploum, Blox and Omta, 2018). Entrepreneurship can also be seen as the process of identifying innovative opportunities with the view to meeting the needs of societies. Thus, entrepreneurship is seen from both managerial and economic dimensions as the willingness and ability of a person to independently seek investment opportunities to run business successfully. This implies that entrepreneurship enables one to do things that cannot be done on routine basis. More so, entrepreneurship entails the way and manner business transactions are conducted by creatively destroying the existing products while making an entirely new product available or improved on a new one (Oing *et al* 2020).

Green Entrepreneurship

Green entrepreneurship as noted by Green project (2012) is seen as the activities that deliberately address social, environmental or ecological needs with the instrumentality of agricultural techniques. Again dale (2015) sees green entrepreneurship as a systematic process through which entrepreneurs get assistance from the critical stakeholders to enable them vigorously pursue their entrepreneurial activities. This means that for green entrepreneurial activities to be successful there must be deliberate effort to integrate the key players with the environment with the view to sustaining their immediate and strategic objectives.

Even though, Benjamin *et al,* (2019) posited that entrepreneurship is the act of creating business venture while scaling towards customers retention as well as profitability. Entrepreneurship creates the avenue to poses the ability to find and act upon business opportunities to transform entrepreneurial innovation or technological know-how into new products or services.

Also, Demuth (2015) revealed that green entrepreneurship is seen as the application of entrepreneurship techniques into green areas or practicing agricultural activities in the most environmentally sustainable manner. Green entrepreneurship therefore means that entrepreneurs identify and practice agricultural activities with the view to providing solutions to climate change, global warning as well as environment solution. Green entrepreneurship is therefore differentiated from non-green businesses through the specific areas such ventures are carried out or the way and manner such practices are implemented especially as it reliable to promotion of environmental sustainability.

Green entrepreneurs therefore serve as variable tools towards enhancing the socio-economic conditions of nations specifically Nigeria and Kogi State. This is due to the fact that green business practices create opportunities to cater for the dynamics of market, thus resulting to product design, process design, concept development and innovative marketing practices.

However, while Dean and Mcmullen (2007) see green entrepreneurship as the process of exploring economic opportunities which are present in environmental relevant market constraints, Kotchen (2009) argued that green entrepreneurship is seen as the practices of commencing new ventures in response to an identified business opportunity with the view to earning profit as well as minimizing

environmental hazard. Again, Anderson and Leal (1997) noted that green entrepreneurship is seen as the process of entrepreneurs applying business techniques to preserve open space, project endangered species enhance wildlife habitat and generally sustain environmental quality from the expository analysis by these authors it shows that the definition by Dean and Mcmullen (2007) borders on organizational characteristics, Kotchen (2009) bordered on process involved while Anderson and Leal (1997) bordered on environment outcomes.

Dimension of Green Entrepreneurship

Green entrepreneurship is measured by using the following indices: green business initiative, agro-tourism, ecological economy and carbon economy. Green business initiative refers to an accumulation of agricultural related activities which requires application of innovative drive towards improved value creation for the immediate and strategic benefits of the clients (Shakeel, Forah, Zahid & Khazina, 2019). Therefore, green business initiatives deal with the systematic and conscious applications of innovative minds of entrepreneurs towards making such venture economically and environmentally sustainable.

On the other hand, agro-tourism which is part of the tertiary agricultural sector deals with the agricultural related input-output processes into the hospitality industry. To this end, the agro-tourism activities entail all agro-allied ventures which are directly or indirectly practiced in the tourism sector. Thus, the conscious practices of this activities target towards ensuring that such venture do not create an adverse effect on the immediate and external environment is imperative.

In addition, ecological economy deals with the agricultural practices that focuses on nature time, justice intergenerational equity and preservation of the environment. This implies that ecological economy deals with the sustainability of the ecosystem without losing track of economic benefits targeted by the venture (Wang, Ming and Zhang, 2020). Carbon economy is viewed as the economic practices that cause low level of carbon emission on the society. This implies that such practices allow economic activities while being conscious of producing low level of greenhouse gas emissions.

Therefore, in practicing carbon economy Henry et al (2021) noted that adverse effects on such practices should be minimized as much as possible. This can be achievable through transmission of green economy as well as development of low carbon infrastructure.

Sustainable Development

Sustainable development is perceived as the economic development model which gives focus to environmental protection while taking account of the validity of economic reality as against the predatory exploitation of the global resources (Evangelos *et al*., 2018). Therefore, sustainable development requires the systematic development of the productive structure of the nation's economy as well as the creation of basic infrastructure for the pursuance of environmental sustainability. The Sustainable Development Goals (SDGs) projects are a set of targets concerning building the future of national development by domesticating and pursuing the development agenda. The SDG replaced the Millennium Development Goals in 2015. Thus, the SDG was formally presented at the United Nation General Assembly through the adoption of its open working group on sustainable development goals. The proposal presented by this group in 2015 was seventeen (17) goals and targeted at all its member countries across the globe including Nigeria and Kogi State. Hence, these goals are targeting at enhancing the socio-economic wellbeing of the citizens.

Sustainability is seen as the acquisition of maximal products from the environment without interrupting the natural amount of production of goods in a satisfactory manner. In discussion sustainable development Notton *et al*, (2018) argued that it requires decoupling which is seen as the activities of venture creation without necessarily aggravating environment challenges. Thus, decoupling is seen to be viable when there is no increase in the environment degradation.

Again, sustainable development needs the development of the productive structure of the economy alongside with the creation of infrastructure while avoiding environmental degradation.

Nexus between Green Entrepreneurship and Sustainable Development

Green entrepreneurship can be seen as an act of enterprises which integrates elements of innovation in agricultural sector. Thus, according to to Bairwa and Lakra (2014) is the aspects of enterprises engaged in all aspects of agribusinesses from the provisions of inputs such as crops and agro-allied businesses, processing, marketing, distribution as well as retail sales. It emphasizes the notion that for agriculture to be sustainable it is required to be seen as enterprises that is conscious of its immediate environment.

Green entrepreneurship means turning your farm into an agribusiness. The term green entrepreneurship is synonym with entrepreneurship in agriculture and which is refers to Agro business establishment in the agriculture and allied sector. Therefore, green entrepreneurial capacity of the small-scale farmers extends to agro processing, mechanized agriculture, animal management, post-harvest management, fish and aquaculture systems which must be a top priority so as to eradicating waste and ensure import substitution, food security, wealth creation, employment generation (Adeoye, 2015).

In addition, Hassan (2011) referred the concept as an employment strategy that enhances economic self-sufficiency for rural people. According to Bairwa and Lakra (2014) defined green entrepreneurship as the profitable integration of agriculture and entrepreneurship which turns a farm into agribusiness establishment in the agriculture and allied sector. Therefore, green entrepreneurship can be seen as agricultural entrepreneurship activities which are regulated to create, distribute, market or convey agricultural products to generate or improve income. Green entrepreneurship is therefore seen as the application of creativity and innovation in the domestication of plants and animals by committing the required human and material resources assuming the associated measurable risks and receiving the rewards of monetary and personal satisfaction as well as independence in an environmentally friendly manner thereby leading to attainment of sustainable development.

This study measures sustainable economic development using the United Nations sustainable development project number one: end poverty in all its forms everywhere, number 7: ensure access to affordable, reliable, sustainable and modern energy for all, number eight" promote sustained, inclusive and sustainable economic growth full and productive employment and decent work for all ad finally number twelve: ensure sustainable consumption and production pattern.

In pursuance of these goals in Kogi State, the Kogi state government requires to provide support to entrepreneurs towards addressing the problem of poverty. This support could be in form of providing soft loans to entrepreneurs and commercial farmers as well as providing an enabling environment for them to strive competitively. In doing this, the problem of massive poverty will be significantly addressed.

More so, as a measure to pursue SDG goal number seven of ensuring access to affordable, reliable, sustainable and modern energy for all the Kogi State have significant made conscious effort towards support the farmers and other entrepreneurs through improved energy by linking almost all part of the state to the national grid at Ajaokuta, Kogi State but more is still only sustaining such more but to constantly improving the services to enable the entrepreneurs meet the dynamics required of them amidst the global business environment. The Kogi State have also key-into the SDG goal number eight of promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. This is also part f the move implemented through the agricultural and entrepreneurial support programmes either initiated by the state government or by extension facilitated through the state. However, considering the nature of Kogi State being a link-way to other parts of the country it is becoming more cosmopolitan hereby making these efforts insufficient because of increased population and urbanization.

The SDG goal number twelve of ensuring sustainable consumption and production pattern has also been pursued by the state however, it is still inadequate owing to the reality of widening unemployment rate and job loss in the state in recent time especially at the state workforce. Therefore, more deliberate, conscious and sincere effort is required in this direction.

Theoretical Literature

Ecological Modernization Theory

Hajer (1995) and Moi (1995) proposed the ecological modernization theory which reviewed the rationality for the practices and consciousness of environmental entrepreneurs. These proponents argued that economic growth and firms' profitability can be concurrently pursued with promotion of environmental sustainability. Thus, there is no need to trade off economic growth or profit motives of firms as a result of environmental sustainability. This implies that the capitalist move for business innovativeness can vigorously be pursued towards environmental sustainability. To this end, entrepreneurs are seen as change agents who are key players in such business transformation process pursuing economic growth amidst environmental sustainability Chukwuka and Eboh (2018) therefore revealed that entrepreneurial activities are fundamental steps towards promotion of environmental protection. Since this model facilitates entrepreneurial drive amidst environmental sustainability. This is why Hajer (1995) revealed that ecoentrepreneurs do not only identify and pursue business opportunities towards economic benefits at the immediate but also seeks to identify and pursue activities that promotes environmental protection.

Research Methodology

This study adopts descriptive research survey design. The descriptive research design is principally aimed at generating scientific evidence on the studied population through presentation of the current status of a phenomenon (Ukwayi et al 2019). The method as noted by Adefila (2014) is a research survey design which involves studying respondents with the aim to collecting responses for the purpose of analysis. This technique is generally adopted as survey research in which a group of persons reached by collecting and analyzing data from few persons which represents the entire population. Therefore, this research which examines green entrepreneurship and socio-economic development of Kogi State involved collecting data through primary sources. Thus, the adoption of descriptive research survey design is because this study fundamentally relied on collection of primary data. The primary data were obtained through a structured questionnaire. However, the analysis was executed using inferential statistics.

Population of the Study

The population of this study comprises of all those involved in agribusinesses in Kogi state. This implies that the studied population are those either directly involved in agricultural businesses or whom business activities has link with agribusinesses such as crop production, forestry or other agro-allied businesses or benefits from agribusiness. Hence, most of those involved in these kinds of businesses fall within the informal sector and therefore not registered again, some of the respondents undertaking these kinds of agribusinesses are mobile. Consequent upon the above reasons, the study assumed an infinite population.

Determination of the Sample Size

The sample for the study was statistically determined using Topman sample size statistical formula for an infinite population. This follows the normal convention that if the population of a study are either mobile or cannot be determined, infinite sample selection formula can be adopted (Agba, 2014). Premised on this, the following sample size formula for an infinite population was used to arrive at a representative number of respondents that was used for the study in line with Topman.
A pilot survey was carried out by randomly given questionnaire to a sample of 25 respondents. Out of the 25 respondents 19 gives a positive response representing 19/25 = 0.8 and 6 respondents gives a negative response representing 6/25 = 0.2. Hence, the success rate represented by P = 0.8 and Q which is the failure rate is =0.2.
Where:

$$n = \frac{Z^2(p)(q)}{e^2}$$

1. n = Sample Size
   z = Standard Deviation given a corresponding confidence level.
   p = Assumed Success Rate
   q = Assumed Failure Rate (1-P)
   e = Proportion of sampling Error margin or Error margin
   Z = at 95% confidence level, the value of Z is 1.96 (Read from a standard Distribution table). IThat is, 95% confidence level two tailed test on Z table is .4750 obtained by dividing 95% by 2 in a two tailed test. Cross-checking the Z table horizontally backward to Z line from .4750 is 1.9 and vertically the probability row is 0.06 hence 1.9 + 0.06 = 1.96.
   p = 80% (0.8) and q = 1- 0.8= 0.2
   e = Error Margin 5% or 0.05 since we have chosen 95% as confidence limit.

$$n=\frac{1.96^2 \times 0.8 \times 0.2}{0.05^2}$$

$$n= 3.8416 \times 0.8 \times 0.2 = \frac{0.614656}{0.0025}$$

$$= 245.86 = 246$$

It should however be noted that the assumed value for success rate is based on pilot study and related studies which include; Okolo (2014), Ogbadu and Usman (2012). This is in line with Okeke, Olise, and Eze, (2014) who also held that assumed success rate can be obtained by pilot study or previous related studies.

Sample and Sampling Techniques

The simple random sampling technique was adopted for the study. In doing this, respondents were given equal chances of being represented in the selection for the study. For sample selection, a simple random sampling technique was used. in order to ensure its effectiveness, the process of "the luck of the draw" was used (Abalaka, 2016). With this technique, Yes and No was written on different pieces of papers for each of the respondents which were considered for selection. Each of the Research Assistants went round to the target respondents. Whoever picked a "YES" among the target respondents was selected for the study. This exercise lasted for the period of two weeks.

Data Analysis and Results

The study tests four hypotheses using the linear regression statistical analysis with the aid of Statistical Packages for Social Sciences (SPSS). The independent variable is green entrepreneurship and it is proxied by green business initiative, agro tourism, ecological economy and carbon economy respectively while the dependent variable is sustainable development and the decomposed variables include poverty indices, economic growth, sustainable modern energy and sustainable consumption. The decision rule is to accept P. value if the alpha value is ≥0.05 otherwise the null hypothesis be rejected.

Test of Hypotheses

Hypothesis 1
H_1: There is no significant relationship between green business initiative and poverty
Table 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.858[a]	.736	.735	.67624	.874

a. Predictors: (Constant), green business initiative
b. Dependent Variable: poverty reduction

The model summary table reports the strength of relationship between the independent and dependent variables. The result of R stood at 0.858 indicating a strong positive relationship between the dependent variable poverty reduction and the explanatory variable green business initiative. The coefficient of multiple determinations R^2 measures the percentage of the total change in the dependent variable that can be explained by the independent or explanatory variable. The result indicates a R^2 of .736 showing that 74 percent of the variances in poverty reduction is explained by the green business initiative while the remaining 16 percent (i.e. 100 – 74) of the variations could be explained by other variables not considered in this model.
The result is supported by the value of the adjusted R which is 74 percent showing that if the entire population is used, the result will deviate by 12.2 percent (that is, 85.8 – 73.6), with the linear regression model, the error of the estimate is considerably low at 0.67624. The result of Durbin Watson test shows .874 therefore it shows that there is no auto correlation.

Table 2 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	267.791	1	267.791	585.585	.000[b]
	Residual	96.034	210	.457		
	Total	363.825	211			

a. Dependent Variable: poverty reduction
b. predictors: (constant), green business initiative

The ANOVA table confirms the results of model summary, analysis of the result revealed that F = 585.585 which is significant at (0.000) < 0.05. Hence, since the P-value < 0.05 (critical value), the null hypothesis that there is no significant relationship between green business initiative and poverty reduction is rejected.

Table .3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.253	.149		1.694	.002
	green business initiative	.924	.038	.858	24.199	.000

a. Dependent Variable: poverty reduction

The coefficient provides information on how the explanatory variable (the estimated coefficient or beta) influences the dependent variable. The result shows that the regression constant is 0.858 giving a predictive value of the dependent variable when all other variables are zero. The coefficient of green business initiative is 0.253 with p-value of 0.000 less than (0.05%) critical value. Therefore, it can be concluded that the null hypothesis that there is no significant relationship between green business initiative and poverty reduction is rejected.

Hypothesis 2

H_2: There is no significant relationship between agro-tourism and economic growth.

Table 4 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.584[a]	.341	.337	1.09633	.458

a. Predictors: (constant), agro-tourism
b. Dependent variable: economic growth

The model summary table reports the strength of relationship between the independent and dependent variable. The result of R stood at 0.584 indicating a strong positive relationship between the dependent variable economic growth and the explanatory variable agro-tourism. The result indicates a R^2 of .341 showing that 34 percent of the variances in product economic growth is explained by agro-tourism while the remaining 66 percent (that is, 100 – 34) of the variations could be explained by other variables not considered in this model. The result is supported by the value of the adjusted R which is 34 percent showing that if the entire population is used, the result will deviate by 24.3 percent (that is, 58.4 – 34.1). With the linear regression model, the error of the estimate is 1,09633. The result of Durbin Watson test shows .458 therefore it shows that there is no auto correlation.

Table 5 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	130.350	1	130.350	108.450	.000[b]
	Residual	252.405	210	1.202		
	Total	282.755	211			

a. Dependent variable: economic growth
b. Predictors: (constant), agro-tourism

The ANOVA table confirms the results of model summary, analysis of the result revealed that F = 108.450 which is significant at (0.000) < 0.05. Hence, since the P-value < 0.05 (critical value), the null hypothesis that there is no significant relationship between agro-tourism and economic growth is rejected.

Table 6 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.542	.215		7.165	.000
	agro-tourism	.573	.055	.584	10.414	.000

a. Dependent Variable: economic growth

The coefficient provides information on how the explanatory variable (the estimated coefficient or beta) influences the dependent variable. The result shows that the regression constant is 1.542 giving a predictive value of the dependent variable when all other variables are zero. The coefficient of agro-tourism is .584 with p-value of 0.000 less than (0.05%) critical value. Therefore, it can be concluded that the null hypothesis that there is no significant relationship between agro-tourism and economic growth is rejected.

Hypothesis 3

H_3: There is no significant relationship between ecological economy and sustainable modern energy.

Table 7 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.574[a]	.329	.326	1.17997	.194

a. Predictors: (constant), ecological economy
b. Dependent variable: sustainable modern energy

The model summary table reports the strength of relationship between the independent and dependent variable. The result of R stood at 0.574 indicating a strong positive relationship between the dependent variable sustainable modern energy and the explanatory variable ecological economy. The coefficient of multiple determinations R^2 measures the percentage of the total change in the dependent variable that can be explained by the independent or explanatory variable. The result indicates a R^2 of .329 showing that 33 percent of the variances in sustainable modern energy is explained by ecological economy while the remaining 67 percent (that is, .100 – 33) of the variations could be explained by other variables not considered in this model. The result is supported by the value of the adjusted R which is 32.6 percent showing that if the entire population is used, the result

will deviate by 24.9 percent (that is, 57.4 – 32.9). With the linear regression model, the error of the estimate is 1.17997. The result of Durbin Watson test shows .194 therefore it shows that there is no auto correlation.

Table 8 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	143.476	1	143.476	103.048	.000[b]
	Residual	292.388	210	1.392		
	Total	435.863	211			

a. Dependent variable: sustainable modern energy
b. Predictors: (constant), ecological economy

The ANOVA table confirms the results of model summary, analysis of the result revealed that F = 103.048 which is significant at (0.000) < 0.05. Hence, since the P-value < 0.05 (critical value), the null hypothesis that there is no significant relationship between ecological economy and sustainable modern economy is rejected.

Table 9 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.298	.200		6.482	.004
	ecological economy	.580	.057	.574	10.151	.000

a. Dependent Variable: Sustainable modern economy

The coefficient provides information on how the explanatory variable (the estimated Coefficient or beta) influences the dependent variable. The result shows that the regression Constant is 1.298 giving a predictive value of the dependent variable when all other variables are zero. The coefficient of ecological economy is .580 with p-value of 0.000 less than (0.05%) critical value. Therefore, it can be concluded that the null hypothesis that there is no significant relationship between ecological economy and sustainable modern economy is rejected.

Hypothesis 4

H_4: There is no significant relationship between carbon economy and sustainable consumption.

Table 10 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.842[a]	.709	.707	1.58773	.056

a. Predictors: (constant), carbon economy
b. Dependent variable: sustainable consumption

The model summary table reports the strength of relationship between the independent and dependent variable. The result of R stood at 0.842 indicating a strong positive relationship between the dependent variable carbon economy and the explanatory variable sustainable consumption. The coefficient of multiple determinations R^2 measures the percentage of the total change in the dependent variable that can be explained by the independent or explanatory variable. The result indicates a R^2 of .061 showing that 71 percent of the variances in sustainable consumption is explained by the carbon economy while the remaining 29 percent (that is, 100 – 71) of the variations could be explained by other variables not considered in this model. The result is supported by the value of the adjusted R which is 71 percent showing that if the entire population is used, the result

will deviate by 0.133 percent (that is 84.2– 0.709) with the linear regression model, the error of the estimate is 1.58773. The result of Durbin Watson test shows .056 therefore it shows that there is no auto correlation.

Table 11 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34.668	1	34.668	13.752	.000[b]
	Residual	529.384	210	2.521		
	Total	564.052	211			

a. Dependent variable: carbon economy
b. Predictors: (constant), sustainable consumption

The ANOVA table confirms the results of model summary, analysis of the result revealed that F =13.752 which is significant at (0.000) < 0.05. Hence, since the P-value < 0.05 (critical value), the null hypothesis that there is no significant relationship between carbon economy and sustainable consumption is rejected.

Table 12 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.781	.266		17.989	.000
	carbon economy	.242	.065	.248	3.708	.000

a. Dependent Variable: sustainable consumption

The coefficient provides information on how the explanatory variable (the estimated coefficient or beta) influences the dependent variable. The result shows that the regression constant is 4.781 giving a predictive value of the dependent variable when all other variables are zero. The coefficient of carbon economy is .248 with p-value of 0.000 less than (0.05%) critical value. Therefore, it can be concluded that the null hypothesis that there is no significant relationship between carbon economy and sustainable consumption is rejected.

Conclusion

Since the relationship between green entrepreneurship and sustainable development was found to be positive and strong, between green business initiative and poverty reduction was found to be positive and strong, between Agro-tourism and economic growth was found to be positive and strong, between ecological economy and sustainable modern economy was found to be positive and strong, Carbon economy and sustainable consumption in was found to be positive and strong. It can be concluded that there is a significant positive relationship between green entrepreneurship and sustainable development in Kogi state.

Recommendations

The study recommends that green entrepreneurship practices should be improved and periodic review be carried out in order to attain sustainable development.

More so, based on the empirical evidence and findings of this study, the research makes the following specific recommendations:

i. This study recommends that green business initiative such as conversion of green waste to wealth be sustained while review be carried out periodically by involving all critical stakeholders. This will help to enhance sustainable development.
ii. The research recommends that Agro-tourism be institutionalized by the government through its relevance agencies such as Ministries of Agriculture, Commerce and Industry thereby making entrepreneurs to be enthusiastic in carrying out their duties consistently which would thereby improve sustainable development.
iii. This study recommends that ecological economy practices be periodically reviewed to suit the reality of meeting the demands of sustainable modern economy. This would help to broaden green entrepreneurial opportunities towards attaining sustainable development in Kogi State.
iv. The study recommends that green entrepreneurship practitioners should reinvigorate techniques of carbon economy to meet sustainable consumption.

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