

## TRIPLE HELIX FUNDING STRATEGY FOR SUSTAINABLE NATIONAL DEVELOPMENT IN STATE-OWNED UNIVERSITIES IN SOUTH-SOUTH, NIGERIA

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### ABSTRACT

This study investigated triple helix funding strategy for sustainable national development in state-owned universities in South-South, Nigeria. A descriptive survey research design was adopted for this study. The population comprised all the state-owned universities, multinational companies and state governments with a management team of 362 members as respondents. The sample was made up of 196 managers (60%), which comprised 127 university managers (VCs', DVCs', Directors of Programmes and Deans of Faculties) drawn from four state-owned universities, 40 company managers and 30 government managers from the ministries in the four selected states using purposive sampling technique. Three different scales of the questionnaire were self-structured and patterned towards four-point Likert scale to elicit information from the respondents. The instruments were duly validated by research experts from Test and Measurement Department of the University of Port Harcourt. The Cronbach Alpha Statistics method was used to establish the internal consistency of the questionnaire items and coefficient of 0.78, 0.69, 0.86 and 0.79 were obtained for the four clusters respectively. The data collected for the study were analysed using mean and rank order scores as the statistical tools to answer the research questions. The findings revealed among others, that the Triple Helix collaboration for sustainable national development is quite low. Based on the findings, it was recommended among others, that universities should be more innovative by coming up with activities that can involve the industries and the government to collaborate with them.

**Keywords:** Triple helix, collaboration, sustainable and development.

### INTRODUCTION

The contributions of universities to national socioeconomic development and knowledge advancement have become areas of increasing concern to scholars and educational stakeholders. In this knowledge-based society, universities are expected to fulfil an ever-growing spectrum of roles such as: educate and train students; conduct and disseminate excellent research; boost productivity through collaborative relations with external partners; contribute to the socioeconomic wellbeing of their localities and enhance civic value in the public realm (Barrioluengo, Uyerra & Kitagawa, 2016). However, the universities ability to measure up to the societal expectations depends to a large extent on the availability of adequate funding. Fund is one of the major resources that is needed to engender the provision of qualitative education. In the Educational Sector, for instance, money is needed to retain the human resource, conduct research, procure and maintain the physical facilities. With the

astronomical increase in students' population in the universities, coupled with the fact that the government's funding is inadvertently decreasing due to recession, it becomes expedient for the universities to collaborate with the industries, as well as the government, so as to take care of their numerous needs.

Triple Helix of university-industry-government (tripartite relationships) is an innovative approach universities are adopting to explore partnership with industries and government due to paucity of funds in implementing their objectives. Etzkowitz and Leydesdorff (1997) noted that this triadic relationship among university-industry-government has been proven to work effectively for world class-research universities, especially those that are faced with draconian budget cut. Collaboration simply means working together with others to achieve a common goal. Educause (2003) asserted that collaboration can also provide new opportunities for universities to reconfigure the way research gets funded, developed, marketed, delivered, and supported. In a similar vein, Etzkowitz and Leydesdorff (1997) opined that the dynamic interactions among the three key innovative actors — university, industry and government, will foster entrepreneurship, innovation and economic growth. According to Abreu and Grinerich (2013), with the Triple Helix synergy, the universities can become entrepreneurial, which can provide students with new ideas, skills and entrepreneurial talents that will enable them to contribute to economic growth and job creation in a society that needs such outcomes more than ever.

Onuka (2012) pointed out that the Vice Chancellors of State-owned Nigerian universities have identified underfunding as the main inhibiting factor to optimal performance in their universities. Babalola (2014) further observed that Nigerian universities are squeezed between expanding responsibilities and dwindling resources, which necessitate them to collaborate or partner with industries that have some resources to spare in order to improve the system. On the other hand, industries, in spite of their resources, lack the expected capacity required to innovate new technologies. It is so glaring that the government can no longer shoulder the responsibility of finding university education alone. This is why it encourages universities and other tertiary institutions to explore other sources of funding as stipulated in the National Policy on Education (FRN, 2014).

Sustainable development is defined by The World Commission on Environment and Development (1987), as cited by Onyeike and Adieme (2014), as the development that meets the need of the present without compromising the ability of future generations to meet their own needs. Ajienska (2012), as cited in Uche (2014), further submitted that sustainable development is a deliberate effort to avoid incurring debts for succeeding generations to pay; rather, it is systematically and strategically working towards developing and handing over sound institutions and innovative solutions, as well as building the capacities of people to face current challenges in a rapidly changing world. Sustainable development is characterised by a continuous, guided process of economic, environmental and social change aimed at promoting wellbeing of citizens now and bearing in mind of the future. Hence, the Triple Helix collaboration among the universities, industries and the government will definitely go a long way to ensuring educational sustainable development.

Prigge and Torraco (2006) categorically asserted that university, government and industry can derive mutual benefits from partnerships to ensure sustainable development. For universities, the collaboration will provide financial support for the educational research, enhance procurement of learning equipment, proficiency in application of some technological tools, broaden students' experience during Industrial Training (IT), identify significant,

interesting, and relevant problems; enhance economic development and increase employment opportunities for students (Babalola, 2014). To Prigge (2005), collaboration will provide industries access to the expertise they lack; aid them in the renewal and expansion of technology; improve access to students as potential employees; expand precompetitive research; and leverage internal research capabilities. Etzkowitz and Leydesdorff (1997) noted that the Triple Helix concept encourages innovative competitions between the universities and the industries in the knowledge society.

Another interesting aspect of Triple Helix is that each institutional sphere will help in the realisation of their different goals while performing their traditional functions (Etzkowitz, 2003). For example, while the government provides enabling resources needed for the universities, the universities, on the other hand, develop relevant manpower for the nation's socioeconomic development through their traditional missions of teaching and research.

The Nigerian Government provided a policy that strengthens the links between universities and the rest of society, especially industries (FRN, 2014). In carrying out their Research and Development objectives, the universities indirectly transfer part of their costs to the industries, which provide a large part of university funding for development of research infrastructural facilities. Leydesdorff (2012) noted that while economic development was traditionally a matter of the Industrial Sector, in this era of knowledge-based society, it has become increasingly dependent on cooperation between industry and knowledge production organisations, which the tertiary institutions represent. Thus, collaboration can leverage the universities to achieving more from their lean resources.

## **THEORETICAL FRAMEWORK**

This study will be hinged on System Resource Model of Organisational Effectiveness which was propounded by Yuchman and Seashore in 1967. This model sees effectiveness as the ability of an organisation to secure an advantageous bargaining through its collaborative power with its environment. According to Okorie (2009), the assumption with this model is that an organisation is an open system that exploits its environment to solve its problem. It focuses on competitiveness. As public funding for higher education continues to decline, universities will be forced to aggressively seek different sources of private funding in order to survive. This is why some institutions have been able to maintain steady growth while others have steadily declined. Hence, in this era of resource scarcity, tertiary institutions are encouraged to partner with their host communities in order to acquire the scarce and valued resources they do not have.

### **Statement of the Problem**

It is an undisputable fact that most Nigerian universities struggle to attain their educational goals and objectives in the midst of paucity of funds and infrastructural decay. This scenario is better imagined than spoken in the State-owned universities, where the Federal Government is giving the States "Bail out" to pay their workers' salaries. It has also been documented that these universities suffer from low output and quality of research due to poor funding of research development. It is worthy to note that research is one of the mandates given to the universities to expedite economic development through advancement of knowledge. If research is poorly conducted, invariably, there will be a wide gap between knowledge and technology in this globalised- knowledge economy.

The Nigerian government prudently acknowledged the fact that it can no longer shoulder the responsibility of funding the universities alone and entrenched in the National Policy on

Education the need for the universities to partner with the industries in their environments. The researchers, however, have observed with dismay that the dyadic relationship between the universities and industries appear to be obscure. This calls for a paradigm shift from the dyadic relationship to a triadic one — Triple Helix, where the government will also be involved. Furthermore, literature is very extensive in university industry partnership, but empirically scanty in the Triple Helix. All these spurred the researchers to conduct a study of this nature in order to ascertain the extent of collaboration with the industries and government for sustainable national development.

### **Aim and Objectives of the Study**

The aim of this study is to investigate how the Triple Helix of university-industry-government collaboration can be revamped for sustainable national development in state-owned universities in South-South, Nigeria. Specifically, the study sought to:

1. ascertain the extent to which state-owned universities collaborate with industries for sustainable national development in South-South, Nigeria;
2. examine the extent to which state-owned universities collaborate with the government for sustainable national development in South-South, Nigeria;
3. find out the extent to which industries collaborate with state-owned universities for sustainable national development in South-South, Nigeria;
4. determine the extent to which government collaborate with state-owned universities for sustainable national development in South-South, Nigeria.

### **Research Questions**

The following research questions were posed to guide the study:

1. To what extent do state-owned universities collaborate with industries for sustainable national development in South-South, Nigeria?
2. To what extent do state-owned universities collaborate with the government for sustainable national development in South-South, Nigeria?
3. To what extent do industries collaborate with state-owned universities for sustainable national development in South-South, Nigeria?
4. To what extent does government collaborate with state-owned universities for sustainable national development in South-South, Nigeria?

### **Methodology**

A descriptive survey research design was adopted for this study. The population comprised all the state-owned universities, multi-national companies and state governments with a management team of 362 members as respondents. The sample was made up of 196 managers (60%), which comprised 127 university managers (VCs', DVCs', Directors of programmes and Deans of Faculties) drawn from four state-owned universities, 40 company managers and 30 government administrators from the ministries in the four selected states namely: Rivers, Delta, Bayelsa and Akwa Ibom using purposive sampling technique. Three different scales of the questionnaire were self-structured for the study. The first, with 19 items was entitled: "University-Industry-Government Collaboration Questionnaire (UIGCQ)." The second, with 9 items was tagged: "Industry-University Collaboration Questionnaire (IUCQ)" and the third, with 10 items was tagged "Government-University Collaboration Questionnaire (GUCQ)" respectively. The instruments have two sections of A and B each. Section A took care of the bio-data of the respondents while Section B elicited information on the variables from the respondents respectively. The instruments were patterned towards a Likert rating scale of High Extent (HE) = 4, Moderate Extent (ME) = 3, Low Extent (LE) 2 and Very Low Extent (VLE) = 1. The instruments were duly validated by

research experts from Test and Measurement Department of the University of Port Harcourt. The Cronbach Alpha's method was used to establish the internal consistency of the questionnaire items and coefficient of 0.78, 0.69, 0.86 and 0.79 were obtained for the four clusters after being trial tested on 15 university managers, 10 company managers and 8 general managers in the ministries from the two states that were not part of the sample. The data collected for the study were analysed using mean and rank order scores as the statistical tools to answer the research questions.

## Results

**Research Question One:** To what extent do state-owned universities collaborate with industries for sustainable national development in South-South, Nigeria?

**Table 1: Mean Scores of Management Staff of Universities and Industries on the Extent to which Universities Collaborate with Industries for Sustainable National Development in State-owned Universities in South-South, Nigeria**

S/N	University-Industry Collaboration Include:	Universities $\bar{X}_1$	Industries $\bar{X}_2$	Mean Set	Rank Order	Remarks
1.	Universities provide the industries with the expertise they lack.	2.87	3.01	2.94	5 <sup>th</sup>	Moderate
2.	They supply the industries with trained labour pool from their outputs.	3.56	3.48	3.52	2 <sup>nd</sup>	High
3.	They conduct researches that aid the industries in technological expansion.	3.24	3.18	3.12	4 <sup>th</sup>	High
4.	They help the industries to boost their production through collaborative relations with experts.	2.76	2.67	2.72	6 <sup>th</sup>	Moderate
5.	They leverage the industries with knowledge of innovative technologies.	3.42	3.21	3.32	3 <sup>rd</sup>	High
6.	Universities expose their products (students) to various entrepreneurial skills which enable them to establish their own industries.	3.57	3.59	3.58	1 <sup>st</sup>	High
7.	Universities collaborate with industries through students' exhibitions which guide them on manpower needs.	2.34	1.58	1.96	7 <sup>th</sup>	Low
<b>Aggregate Mean</b>		<b>3.12</b>	<b>2.96</b>	<b>3.04</b>		

**Legend: High = 3.0 – 4.0; Moderate = 2.5 – 2.99; Low = 1.5 – 2.49; Very Low = 0.0 – 1.49**

Data in Table 1 show the mean scores of Management staff of universities and industries on the extent to which universities collaborate with industries for sustainable national development in state- owned universities in South-South, Nigeria. The results revealed that the extent to which universities collaborate with industries is quite encouraging as most of the items are greater than the criterion mean of 2.50 following the rank order ranging from 1 to 6<sup>th</sup>. However, it was discovered that item 7 was rejected; hence, the collaboration is to a low extent. The aggregate mean set of 3.04 for university and industry Management staff respectively showed that universities collaborate with industries to a high extent. These include: universities provide the industries with the expertise they lack; supply the industries with trained labour pool from their outputs; conduct researches that aid the industries in technological expansion; help the industries to boost their production through collaborative relations with experts; leverage the industries with knowledge of innovative technologies and expose their products (students) to various entrepreneurial skills which enable them to establish their own industries.

**Research Question Two:** To what extent do state-owned universities collaborate with the government for sustainable national development in South-South, Nigeria?



**Table 2: Mean Scores of Management Staff of Universities and Government on the Extent to which Universities Collaborate with Government for Sustainable National Development in State-owned Universities in South-South, Nigeria**

S/N	University-Government Collaboration Include:	Universities $\bar{X}_1$	Government $\bar{X}_2$	Mean Set	Rank Order	Remarks
1.	Universities train relevant manpower needed for national development.	3.57	3.45	3.51	2 <sup>nd</sup>	High
2.	They contribute to socio-economic wellbeing of the nation through their researches.	3.36	3.27	3.31	4 <sup>th</sup>	High
3.	They promote civic value in the society through character moulding.	3.21	2.58	2.90	7 <sup>th</sup>	Moderate
4.	They assists the government in solving problems through their research and development.	3.19	2.84	3.02	5 <sup>th</sup>	High
5.	Entrepreneurial Universities help the government to train entrepreneurs (students), who can are self-employed.	2.87	2.63	2.75	8 <sup>th</sup>	Moderate
6.	University products become employers of labour who employ many graduates; thereby reducing the number of unemployed youths in the country.	3.85	3.65	3.75	1 <sup>st</sup>	High
7.	They implement policies and programmes that are introduced in the educational system.	3.55	3.42	3.49	3 <sup>rd</sup>	High
8.	Universities also leverage the government by generating internal revenues through their business enterprises.	3.24	2.63	2.94	6 <sup>th</sup>	Moderate
<b>Aggregate Mean</b>		<b>3.36</b>	<b>3.06</b>	<b>3.21</b>		

**Legend: High = 3.0 – 4.0; Moderate = 2.5 – 2.99; Low = 1.5 – 2.49; Very Low = 0.0 – 1.49**

Results in Table 2 reveal the mean scores of Management staff of universities and government on the extent to which universities collaborate with government for sustainable national development in state-owned universities in South-South, Nigeria. The results showed that both universities and government Management staff accepted that the extent to which universities collaborate with government is quite encouraging as all the items are greater than the criterion mean of 2.50 following the rank order ranging from 1st to 8th. The aggregate mean scores of 3.36 and 3.06 for university and industry Management staff respectively showed that the extent to which universities collaborate with government high. These include: universities train relevant manpower needed for national development; contribute to socioeconomic wellbeing of the nation through their researches; promote civic value in the society through character moulding; assist the government in solving problems through their research and development; implement policies and programmes that are introduced in the educational system and also leverage the government by generating internal revenues through their business enterprises. Entrepreneurial Universities help the government to train entrepreneurs (students), who can are self-employed; university products become employers of labour who employ many graduates; thereby reducing the number of unemployed youths in the country.

**Research Question Three:** To what extent do industries collaborate with state-owned universities for sustainable national development in South-South, Nigeria?

**Table 3: Mean Scores of Management Staff of Industries and Universities on the Extent to which Industries Collaborate with Universities for Sustainable National Development in State-owned Universities in South-South, Nigeria**

S/N	Industry-University Collaboration Include:	Industries $\bar{X}_1$	Universities $\bar{X}_2$	Mean Set	Rank Order	Remarks
1.	Industries leverage universities with funds for research development.	2.59	1.89	2.24	8 <sup>th</sup>	Low
2.	They make the universities become entrepreneurial ones through their collaborative relationship.	2.76	1.97	2.37	6 <sup>th</sup>	Low
3.	They expose the university products to sophisticated machineries during their Industrial Training (IT) programmes.	3.29	3.25	3.27	3 <sup>rd</sup>	High
4.	They increase proficiency in the application of some technological tools the students may have learnt theoretically.	3.41	3.20	3.31	2 <sup>nd</sup>	High
5.	They offer employment opportunities to university outputs.	3.56	3.37	3.47	1 <sup>st</sup>	High
6.	They collaborate with universities by forecasting areas for manpower development.	3.03	2.64	2.84	5 <sup>th</sup>	Moderate
7.	They partner with universities in building ultra-modern classroom blocks, offices, hostels, etc through endowment funds.	2.38	2.09	2.24	8 <sup>th</sup>	Low
8.	They award scholarships to students in order to encourage them to be more focused with their studies.	3.04	2.76	2.90	4 <sup>th</sup>	Moderate
9.	They also assist indigent children to gain access to education through scholarship schemes.	2.81	1.93	2.37	6 <sup>th</sup>	Low
<b>Aggregate Mean</b>		<b>2.98</b>	<b>2.57</b>	<b>2.78</b>		

**Legend: High = 3.0 – 4.0; Moderate = 2.5 – 2.99; Low = 1.5 – 2.49; Very Low = 0.0 – 1.49**

Table 3 displays the mean scores of Management staff of industries and universities on the extent to which industries collaborate with universities for sustainable national development in state-owned universities in South-South, Nigeria. The results showed that both industries and universities Management staff accepted that industries collaborate with universities to a high extent on items 3, 4 and 5. They also accepted that industries collaborate with universities to a moderate extent on items 6 and 7. However, they rejected items 1, 2, 7 and 9 which have low extent of collaboration; hence, their mean scores are less than the criterion mean of 2.50. The aggregate mean scores of 2.98 and 2.57 for university and industry Management staff respectively showed that the extent to which industries collaborate with universities is moderate.

These include: industries expose the university products to sophisticated machineries during their Industrial Training (IT) programmes; increase proficiency in the application of some technological tools the students may have learnt theoretically; offer employment opportunities to university outputs; collaborate with universities by forecasting areas for manpower development and award scholarships to students in order to encourage them to be more focused with their studies. However, pertinent findings of the study revealed that industry-university collaboration is to a low extent in the following areas: leveraging universities with funds for research development; making the universities become entrepreneurial ones through their collaborative relationship; partnering with universities in

building ultra-modern classroom blocks, offices, hostels, etc through endowment funds and assisting indigent children to gain access to education through scholarship schemes.

**Research Question Four:** To what extent does government collaborate with state-owned universities for sustainable national development in South-South, Nigeria?

**Table 4: Mean Scores of Management Staff of Government and Universities on the Extent to which Government Collaborate with Universities for Sustainable National Development in State-owned Universities in South-South, Nigeria**

S/N	Industry-University Collaboration Include:	Industries $\bar{X}_1$	Universities $\bar{X}_2$	Mean Set	Rank Order	Remarks
1.	Government formulates educational policies and programmes for universities.	3.55	3.05	3.53	1 <sup>st</sup>	High
2.	It provides enabling resources like personnel, infrastructural facilities to run the universities.	3.59	3.35	3.47	2 <sup>nd</sup>	High
3.	It gives research grants to academic staff for advancement of knowledge.	2.56	1.72	2.14	9 <sup>th</sup>	Low
4.	It allows the educational programmes to run for a considerable period of time before introducing another one.	2.34	2.19	2.27	7 <sup>th</sup>	Low
5.	It offers scholarship to students through Bursary scheme.	2.67	2.39	2.53	6 <sup>th</sup>	Moderate
6.	It pays staff salaries and allowances promptly.	2.68	2.46	2.57	4 <sup>th</sup>	Moderate
7.	It offers employment opportunities to university outputs.	2.85	2.31	2.58	3 <sup>rd</sup>	Moderate
8.	It leverage the universities with sufficient funds through the annual budget allocation.	2.16	1.29	1.71	10 <sup>th</sup>	Low
9.	It offers appointment to university staff in some key-critical positions that affect education.	2.54	1.87	2.21	8 <sup>th</sup>	Low
10.	Government ensures steady progress (negentropy) of the universities by always reaching an agreement with them each time they threaten to embark on industrial actions.	2.63	2.51	2.57	4 <sup>th</sup>	Moderate
<b>Aggregate Mean</b>		<b>2.76</b>	<b>2.48</b>	<b>2.62</b>		

**Legend: High = 3.0 – 4.0; Moderate = 2.5 – 2.99; Low = 1.5 – 2.49; Very Low = 0.0 – 1.49**

Data in Table 4 indicates the mean scores of Management staff of government and universities on the extent to which government collaborate with universities for sustainable national development in state-owned universities in South-South, Nigeria. The results showed that both government and university Management staff accepted that government collaborate with universities to a high extent on only items 1 and 2. They also accepted that government collaborate with universities to a moderate extent on items 5, 6, 7 and 10. However, they rejected items 3, 4, 8 and 9, which have low extent of collaboration with mean scores less than the criterion mean of 2.50. The aggregate mean scores of 2.76 and 2.48 for government and university Management staff respectively showed that the extent to which government collaborates with universities is moderate. These include: government formulates educational policies and programmes for universities; provides enabling resources like personnel, infrastructural facilities to run the universities; offers scholarship to students through Bursary scheme; pays staff salaries and allowances promptly; offers employment opportunities to university outputs and ensures steady progress (negentropy) of the universities by always reaching an agreement with them each time they threaten to embark on industrial actions.

However, the results revealed that government collaboration in the following areas are quite low: offering research grants to academic staff for advancement of knowledge; allowing the educational programmes to run for a considerable period of time before introducing another



one; leveraging the universities with sufficient funds through the annual budget allocation and offering appointment to university staff in some key-critical positions that affect education.

## **DISCUSSION OF FINDINGS**

The findings of this study revealed that the extent to which universities collaborate with industries is quite high. These include: universities provide the industries with the expertise they lack; they supply the industries with trained labour pool from their outputs; they conduct researches that aid the industries in technological expansion; they help the industries to boost their production through collaborative relations with experts; they leverage the industries with knowledge of innovative technologies and universities expose their products (students) to various entrepreneurial skills which enable them to establish their own industries. The findings of this study are in consonance with Prigge and Torracco (2006); Babalola (2004), who succinctly asserted that university and industry can derive mutual benefits from partnerships to ensure sustainable development. The findings are also in line with Etzkowitz and Leydesdorif (1997), who noted that the Triple Helix concept encourages innovative competitions between the universities and the industries in the knowledge society.

The findings also revealed that the extent to which universities collaborate with government is high. These include: universities train relevant manpower needed for national development; they contribute to socioeconomic wellbeing of the nation through their researches; they promote civic value in the society through character moulding; they assist the government in solving problems through their research and development; Entrepreneurial Universities help the government to train entrepreneurs (students), who can be self-employed; university products become employers of labour who employ many graduates; thereby reducing the number of unemployed youths in the country; they implement policies and programmes that are introduced in the educational system and universities also leverage the government by generating internal revenues through their business enterprises. These findings are in agreement with Barrioluengo, Uyarra and Kitagawa (2016); Prigge (2005), who emphasised that universities are expected to fulfil an ever-growing spectrum of roles to the government such as: educate and train students; conduct and disseminate excellent research; boost productivity through collaborative relations with external partners; contribute to the socioeconomic wellbeing of their localities and enhance civic value in the public realm.

Another finding of this study revealed that extent to which industries collaborate with universities is moderate. These include: industries expose the university products to sophisticated machineries during their Industrial Training (IT) programmes; they increase proficiency in the application of some technological tools the students may have learnt theoretically; they offer employment opportunities to university outputs; they collaborate with universities by forecasting areas for manpower development and they award scholarships to students in order to encourage them to be more focused with their studies. This is in agreement with Educause (2003), who asserted that industry collaboration can also provide new opportunities for universities to reconfigure the way research gets funded, developed, marketed, delivered, and supported. In a similar vein, Etzkowitz and Leydesdorif (1997) corroborated that the dynamic interactions among the three key innovative actors — university, industry and government, will foster entrepreneurship, innovation and economic growth.

However, pertinent findings of the study revealed that industry-university collaboration is to a low extent in the following areas: leveraging universities with funds for research development; making the universities become entrepreneurial ones through their collaborative relationship; partnering with universities in building ultra-modern classroom blocks, offices, hostels, etc, through endowment funds and assisting indigent children to gain access to education through scholarship schemes. Conversely, these findings disagreed with Prigge (2005), who postulated that collaboration with industries will expand precompetitive research and leverage internal research capabilities by providing research grants to the universities.

The findings of this study finally revealed that the extent to which government collaborates with universities is moderate. These include: government formulates educational policies and programmes for universities; it provides enabling resources like personnel, infrastructural facilities to run the universities; it offers scholarship to students through Bursary scheme; it pays staff salaries and allowances promptly. It offers employment opportunities to university outputs. Government ensures steady progress (negentropy) of the universities by always reaching an agreement with them each time they threaten to embark on industrial actions. The findings are in line with Etzkowitz (2003), who posited that another interesting aspect of Triple Helix is that each institutional sphere will help in the realisation of their different goals while performing their traditional functions. For example, while the government provides enabling resources needed for the universities, the universities, on the other hand, develop relevant manpower for the nation's socioeconomic development through their traditional missions of teaching and research.

It is worthy to note that the results of this study also revealed that government collaboration with the universities in the following areas are quite low: offering research grants to academic staff for advancement of knowledge; allowing the educational programmes to run for a considerable period of time before introducing another one; leveraging the universities with sufficient funds through the annual budget allocation and offering appointment to university staff in some key- critical positions that affect education. However, these are in concurrence with Babalola (2014), who maintained that Nigerian universities are squeezed between expanding responsibilities and dwindling resources.

## **CONCLUSION**

Based on the findings of this study, one can reasonably conclude that the extent, to which university-industry-government collaborate for sustainable national development is quite low. One can therefore deduce that university partnership with these key actors needs to be revamped in order to achieve the laudable Nigerian educational goals.

## **RECOMMENDATIONS**

Based on the findings of this study, the following recommendations were made:

1. Universities should be more innovative by coming up with activities that can involve the industries to collaborate with them.
2. Universities should tend towards becoming entrepreneurial so as to be generating substantial internal revenues that can help them to take care of most of their needs.
3. Industries should endeavour to partner with universities in the areas of research and infrastructural development.

4. Government should make research grants a priority for academic staff of universities since it fosters knowledge advancement that can expedite economic development.

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