



Extent of Collaboration between Tertiary Institutions, Industries and Government Agencies towards Improving TVET for Sustainable Development in Nigeria

¹E. Raymond; ²Shaluko Yohanna Doma, ³Nathaniel N. Umaru

¹ Department of Industrial and Technology Education
Federal University of Technology Minna

² & ³ School of Technical Education

Department of Electrical Electronics

Niger State College of Education Minna

ABSTRACT

This study aimed to evaluate the level of collaboration among tertiary institutions, industries, and government agencies in Nigeria, with a focus on enhancing Technical and Vocational Education and Training (TVET) for sustainable development. The research employed a descriptive survey research design and was conducted within state-owned tertiary institutions offering TVET programs in Niger State. The study involved 161 respondents, including provosts, deputy provosts, and directors of programs, deans, rectors, academic lecturers, company managers, and government administrators. To collect data, validated instruments were used, and Cronbach Alpha's method ensured the internal consistency of questionnaire items. The data analysis employed mean values to address four research questions. The findings indicated that there is a high level of collaboration between tertiary institutions and industries. Both tertiary institutions and government management staff acknowledged a high extent of collaboration between tertiary institutions and the government. Furthermore, the study revealed that industries and tertiary institutions' management staff perceived their collaboration as moderate, and the same was true for government collaboration with universities. The study's recommendations include urging state-owned tertiary institutions offering TVET courses in Niger State to enhance their innovativeness to engage industries in collaborative efforts. Industries are encouraged to partner with these institutions, particularly in research and infrastructural development. Additionally, the government is advised to prioritize research grants for university academic staff as it can contribute to knowledge advancement and expedite economic development.

ARTICLE INFO

Article History

Received: July, 2023

Received in revised form: July, 2023

Accepted: August, 2023

Published online: September, 2023

KEYWORDS

State owned tertiary institutions, tertiary institutions, industries and government agencies, Technical Vocational Education and Training (TVET) and sustainable development.

INTRODUCTION

Technical and Vocational Education training (TVET) has contributed a lot to the development of Nigeria in order to be a better place for living. Chen (2012), said that TVET is concerned with the acquisition of knowledge and skills for the world of work to increase opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development in knowledge economies, to increase their chances for

employability, young people and adults need skills that are adaptable. Technical and Vocational Education Training is an education which prepares the students especially for working in certain field (Lawal, 2017). Technical and Vocational education training has mission to prepare the students to be able to face changes in their community especially for working in certain field (Magatakarda, 2017). Therefore, from the foregoing, it can be seen that TVET try to develop an individual

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



ability to be able to survive in social life with skill which they have and give impact of changes and economic social development. TVET which has been defined as an education programme that orients people into skills acquisition, and inculcates the attitude and knowledge necessary for performance in specific occupational callings (Okoye & Uduodo, 2015). Adeniyi (2012) appraises the goals of technical and vocational education as being to train manpower in applied science, technology and commerce; to provide technical knowledge and vocational skills and give introduction to professional studies; and to train and impart skills to craftsmen, while enabling the youths to have an intelligent grasp of the increasing complexity of technology.

TVET education is offered at technical, vocational and tertiary level of which the tertiary level is the highest level and this is where the highest certificate, diploma and degrees are awarded (Ethel, 2013). The tertiary institutions are higher education, a post-secondary section of the national education system of Nigeria was programmed to educate universities, colleges of education, polytechnics, colleges of Technology Technical Colleges and Universities of Technology (FGN, 2014). In Nigeria, tertiary education is basically classified as either Colleges of Education, Polytechnics or Universities. Polytechnics are tertiary institutions of learning that award graduate with National Diploma (ND) and Higher National Diploma (HND) certificates, Colleges of Education are also tertiary institutions of learning that certify graduate with Nigeria Certificate in Education (NCE) while Universities award graduate with Bachelors, Masters and Doctoral Degree certificates (Chibuzor, 2018). Tertiary or higher education as emphasized by the Federal Republic of Nigeria (FRN, 2014), in her National policy on Education, is any education given to an individual after secondary education in formal institution (university, colleges of education, polytechnic and monotechnics) including those running correspondence courses. The Federal Republic of Nigeria (2014) highlights the goals of tertiary education thus; to contribute to national development through higher level relevant manpower training; develop and

inculcate proper value for the survival of the individual land society; to develop the intellectual capacity of individual to understand and appreciate their local and external environment, to acquire both physical and intellectual skills which will enable individual to be self-reliant and useful members of the society; to promote and encourage scholarship and cement national unity and to promote national and international understanding and interaction. Tertiary education benefits not just the individual, but society as a whole.

Education is today largely paid for and almost entirely administered by governmental bodies or non-profit institutions which Niger State tertiary institution are beneficiaries. Tertiary institutions generally are to assist in the development of the nation's development goals (Ogunsanmi, 2014). The contributions of tertiary institutions to national socioeconomic development and knowledge advancement have become areas of increasing concern to scholars and educational stakeholders (Magatakarda, 2017). However, the tertiary institutions ability to measure up to the societal expectations depends to a large extent on the availability of adequate funding because it's the major resources that is needed to engender the provision of qualitative education (Abdulkareem, 2018). 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 and other tertiary institutions to collaborate with the industries, as well as the government, so as to take care of their numerous needs (Francis, 2014). This effort is important to be implemented to overcome the increasing the number of educated unemployed by preparing graduates for vocations (Lawal, 2017). It has been commonly acknowledged that single organizational sectors alone can no longer respond to changes and uncertainties unless they cooperate with each other. For instance, tertiary institution produce and transfer more

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



knowledge to industry and society, while gaining additional funding sources from industry and government to strengthen the performance of research (Francis, 2014).

The collaboration of State-owned tertiary institutions, industry and government also called the tripartite relationships is an innovative approach university are adopting to explore partnership with industries and government due to paucity of funds in implementing their objectives (Okwelle & Wordu, 2016). Collaboration simply means working together with others to achieve a common goal. Abdulkareem (2018) 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, Onuka (2016) opined that the dynamic interactions among the three key innovative actors tertiary institution, industry and government, will foster entrepreneurship, innovation and economic growth. It is so glaring that the government can no longer shoulder the responsibility of finding university and tertiary education institutions alone. This is why it encourages universities and other tertiary institutions to explore other sources of funding that can enhance sustainable development in TVET as stipulated in the National Policy on Education

Sustainable development is defined as the development that meets the need of the present without compromising the ability of future generations to meet their own needs. 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 (Okoye & Uduodo, 2015). Hence, the collaboration among the universities, industries and the government will definitely go a long way to ensuring educational sustainable development. The interesting aspect of collaboration is that each institutional sphere will help in the realization of their different goals while performing their traditional functions (Onyeike & Adieme, 2018). Etzkowitz and Leydesdorff (2017) 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. In the view of above background, the study tends to assess the extent of collaboration between Niger State owned tertiary institutions, industries and government agencies towards improving TVET for sustainable development in Nigeria.

Statement of the Problem

The essence of collaboration between the tertiary institutions, industries and government is to 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. Even with the collaborative effort of both tertiary institutions, industries and government, yet the aim guiding the establishment of these tertiary institutions is yet to be achieved. There is no doubt that most of the state-owned tertiary institutions of learning are still struggling to attain their educational goals and objectives in the midst of paucity of funds and infrastructural decay despite the collaboration of the tertiary institutions, industries and government (Magatakarda, 2017). Akinyemi (2016) also observed that even with the collaboration effort by the state-owned tertiary institutions, government and industries still there are several challenges facing these institutions such as over population, problems of finance, physical development and health problems and academic problems. Onyeike and Adieme (2018) also observed that the triadic relationship between the tertiary institutions, government and industries appear to be obscure because some of the tertiary institutions are still bailed out by the government to enable them pay their workers' salaries and other allowances and they also suffer from low output and quality of research due to poor funding of research development. All these challenges might be as a result of the

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



inability of the management of these tertiary institutions to have access to the resources sent to them through these collaborative bodies or the resources are fully received but not properly managed or put into judicial use by the administrators of these tertiary institutions. The implication is that if resources and facilities meant teaching, learning and research development are not available then our challenges will remain that even with the larger pool of graduates of tertiary institutions, many will not have the locally relevant skills needed for a successful integration into the labor market. Okoye and Uduodo (2015) observed that if resources for teaching, learning research purposes are not available, definitely, there will be a wide gap between knowledge and skills in this globalized-knowledge economy and our graduates will still remain as job seeker instead of job creator. All these challenges spurred the researchers to conduct a study in order to ascertain the extent of collaboration between tertiary institutions, industries and government agencies towards improving TVET for sustainable development in Nigeria.

Aim and Objectives of the Study

The aim of this study is to investigate the extent of collaboration between tertiary institutions, industries and government agencies towards improving TVET for sustainable development in Niger State, Nigeria. Specifically, the study sought to:

1. Ascertain the extent to which tertiary institutions collaborate with industries for sustainable national development in Niger State, Nigeria;
2. Examine the extent to which tertiary institutions collaborate with the government for sustainable national development in Niger State, Nigeria;
3. Find out the extent to which industries collaborate with tertiary institutions for sustainable national development in Niger State, Nigeria;
4. Determine the extent to which government collaborate with tertiary institutions for sustainable national development in Niger State, Nigeria.

Research Questions

The following research questions were posed to guide the study, to what extent does:

1. The tertiary institutions collaborate with industries for sustainable national development in tertiary institutions in Niger State, Nigeria?
2. The tertiary institutions collaborate with the government for sustainable national development in tertiary institutions in Niger State, Nigeria?
3. Industries collaborate with Tertiary institutions for sustainable national development in tertiary institutions in Niger State, Nigeria?
4. The government collaborate with tertiary institutions for sustainable national development in tertiary institutions in Niger State, Nigeria?

METHODOLOGY

A descriptive survey research design was adopted for this study. The study was carried out in all the state owned tertiary institutions in Niger state with the total population of 161 respondents which comprised of 2 provost, 2 Deputy provost, 8 Directors of programmes and 5 Deans of schools, one rector and one deputy rector, 15 heads of departments and 61 academic lecturers teaching TVET courses drawn from Niger State college of education Minna, Niger state polytechnics zungeru and Minna institute of innovation Technology Minna Niger state, 40 company managers and 30 government administrators 8 from the ministries for tertiary education given the total of 161. The instruments were designed by the researcher using the four Likert-type rating scale as High Extent (HE) = 4, Moderate Extent (ME) = 3, Low Extent (LE) 2 and Very Low Extent (VLE) = 1. Mean between 3.0 – 4.0 was regarded and high extent; Moderate extent from 2.5 – 2.99; Low extent from 1.5 – 2.49 and Very Low extent from 0.0 – 1.49. The instruments were duly validated by research experts from Federal University of technology Minna. Cronbach Alpha's method was used to establish the internal consistency of the questionnaire items and coefficient of 0.78,

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



0.69, 0.86 and 0.79 were obtained for the four clusters after being trial tested in the federal polytechnic Kaduna, managers are 10 company managers and 8 director at the ministry for tertiary education Kaduna state which is not part of the study area. The data collected for the study were analysed using mean and standard deviation to answer all the four research questions. Each item was regarded as accepted at high extent if the item mean is greater or equal to 3.00, while item

below 3.00 was considered accepted at moderate extent while below 2.50 was considered accepted at low extent.

RESULTS

Research Question One:

To what extent do tertiary institutions collaborate with industries for sustainable national development in tertiary institutions in Niger State, Nigeria?

Table 1: Mean Scores of Management Staff of Tertiary institutions and Industries on the Extent to which Tertiary institutions Collaborate with Industries for Sustainable National Development in tertiary institutions in Niger State, Nigeria

S/N	Items	X 1 Tertiary	X 2 Industries	\bar{x}	SD	Remarks
1	Tertiaries institutions provide the industries with the expertise they lack.	2.87	3.01	2.94	0.66	Moderate
2	Tertiaries institutions supply the industries with trained labour pool from their outputs	3.56	3.48	3.52	0.53	High
3	Tertiaries institutions conduct researches that aid the industries in technological expansion	3.24	3.18	3.12	0.64	High
4	Tertiaries institutions help the industries to boost their production through collaborative relations with experts	2.76	2.67	2.72	0.73	Moderate
5	Tertiaries institutions leverage the industries with knowledge of innovative technologies.	3.42	3.21	3.32	0.55	High
6	Tertiary institutions expose their products students to various entrepreneurial skills which enable them to establish their own industries.	3.57	3.59	3.58	0.84	High
7	Tertiary institutions tools collaborate with industries through students' exhibitions which guide them on manpower needs.	2.04	1.58	1.96	0.51	Low
Total Mean		3.12	2.96	3.04		

Keys: High = 3.0 – 4.0; Moderate = 2.5 – 2.99; Low = 1.5 – 2.49; Very Low = 0.0 – 1.49; SD= standard deviation and \bar{x} = mean

Table 1 show the mean scores of staff of state- owned tertiaries institutions and industries on the extent to which they collaborate with each other for sustainable national development in Niger State, Nigeria. The results revealed that the extent to which tertiaries schools collaborate with industries is quite encouraging as most of the items are greater than the criterion mean of 2.50 item 2,3,5 and 6 were accepted at high extent while item 1 accepted at moderate extent and finally, it was discovered that item 7 was rejected;

hence, the collaboration is to a high extent. The standard deviations scores of staff of state- owned tertiaries institutions and industries on the extent to which they collaborate with each other, ranged from 0.51 to 0.84 indicating that the respondents were very far from the mean of one another in their responses.

Research Question Two: To what extent do Tertiary institutions collaborate with the government for sustainable national

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



development in tertiary institutions in Niger State, Nigeria?

Table 2: Mean Scores of Management Staff of Tertiary institutions and Government on the Extent to which Tertiary institutions Collaborate with Government for Sustainable National Development in State-owned tertiary institutions in Niger State, Nigeria?

S/N	Items	X 1 Tertiary	X 2 Govt	\bar{X}	SD	Remarks
1	Tertiary institutions train relevant manpower needed for national development	3.57	3.45	3.51	0.51	High
2	Tertiaries institutions contribute to socio-economic wellbeing of the nation through their researches.	3.06	3.27	3.31	0.80	High
3	Tertiaries institutions promote civic value in the society through character moulding.	3.21	2.58	2.98	0.84	Moderate
4	Tertiaries institutions assists the government in solving problems through their research and development	3.19	2.84	3.05	0.52	High
5	Tertiary institutions help the government to train entrepreneurs (students), who can are self-employed.	2.87	2.63	2.75	0.85	Moderate
6	Tertiary institutions 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	0.50	High
7	Tertiaries institutions implement policies and programmes that are introduced in the educational system.	3.55	3.42	3.49	0.60	High
8	Tertiary institutions also leverage the government by generating internal revenues through their business enterprises	3.24	2.63	2.94	0.64	Moderate
Total Mean		3.36	3.06	3.21		

Results in Table 2 reveal the mean scores of Management staff of tertiary institutions and government on the extent to which state-owned tertiary institutions collaborate with government for sustainable national development in Niger State, Nigeria. The results showed that both tertiary schools and government Management staff accepted that the extent to which tertiary institutions collaborate with government is quite encouraging as all the items are greater than the criterion mean of 2.50 as item 1, 2, 4, 6 and 7 were accepted at high extent while item 3, 5 and 8 were accepted at moderate extent.

The standard deviations scores of Management staff of tertiary institutions and government on the extent to which state-owned tertiary institutions collaborate with government, ranged from 0.50 to 0.85 indicating that the respondents were very far from the mean of one another in their responses.

Research Question Three: To what extent do industries collaborate with Tertiary institutions for sustainable national development in tertiary institutions in Niger State, Nigeria?

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



Table 3: Mean Scores of Management Staff of Industries and Tertiary institutions on the Extent to which Industries Collaborate with for Sustainable National Development in Niger State, Nigeria

S/N	Items	X 1 Industries	X 2 Tertiary	\bar{X}	SD	Remarks
1	Industries leverage tertiary institutions with funds for research development.	2.59	1.89	2.24	0.87	Low
2	Industries make the institutions become entrepreneurial ones through their collaborative relationship.	2.76	1.97	2.37	0.70	Low
3	Industries expose the tertiary institutions products to sophisticated machineries during their Industrial Training (IT) programmes.	3.29	3.25	3.27	0.75	High
4	Industries increase proficiency in the application of some technological tools the students may have learnt theoretically.	3.41	3.20	3.31	0.64	High
5	Industries offer employment opportunities to tertiary institutions outputs.	3.56	3.37	3.47	0.60	High
6	Industries collaborate with tertiary institutions by forecasting areas for manpower development	3.03	2.64	2.84	0.74	Moderate
7	Industries partner with tertiary institutions in building ultra-modern classroom blocks, offices, hostels, etc through endowment funds.	2.38	2.09	2.24	0.87	Low
8	Industries award scholarships to students in order to encourage them to be more focused with their studies.	3.04	2.76	2.90	0.70	Moderate
9	Industries also assist indigent children to gain access to education through scholarship schemes.	2.81	1.93	2.37	0.67	Low
Total Mean		2.98	2.57	2.78		

Table 3 displays the mean scores of Management staff of industries and state-owned tertiary institutions on the extent to which industries collaborate with universities for sustainable national development in Niger State, Nigeria. The results showed that both industries and tertiary institutions Management staff accepted that industries collaborate with tertiary institutions to a high extent on items 3, 4 and 5. They also accepted that industries collaborate with tertiary institutions 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 tertiary institutions and industry Management staff respectively showed that the extent to which industries collaborate with tertiary institutions is moderate. The standard deviations scores of Management staff of industries and state-owned tertiary institutions on the extent to which industries collaborate with universities, ranged from 0.60 to 0.87 indicating that the respondents were very far from the mean of one another in their responses

Research Question Four: To what extent does government collaborate with Tertiary institutions for sustainable national development in tertiary institutions in Niger State, Nigeria?

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



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

S/N	Items	X 1 Govt	X 2 Tertiary	\bar{x}	SD	Remarks
1	Government formulates educational policies and programmes for Tertiary institutions	3.55	3.05	3.30	0.62	High
2	Government provides enabling resources like personnel, infrastructural facilities to run the Tertiary institutions	3.59	3.35	3.47	0.68	High
3	Government gives research grants to academic staff for advancement of knowledge.	2.56	1.72	2.14	1.05	Low
4	Government allows the educational programmes to run for a considerable period of time before introducing another one.	2.34	2.19	2.27	0.83	Low
5	Government offers scholarship to students through Bursary scheme	2.67	2.39	2.53	0.75	Moderate
6	Government pays staff salaries and allowances promptly	2.68	2.46	2.57	0.82	Moderate
7	Government offers employment opportunities to Tertiary institutions outputs	2.85	2.31	2.58	0.84	Moderate
8	Government leverage the universities with sufficient funds through the annual budget allocation.	2.16	1.39	1.71	0.57	Low
9	Government offers appointment to university staff in some key-critical positions that affect education.	2.54	1.87	2.21	0.92	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	0.72	Moderate
Total Average Mean		2.76	2.48	2.62		

Table 4 indicates the mean scores of Management staff of government and State-owned tertiary institutions on the extent to which government collaborate with State-owned tertiary institutions for sustainable national development in Niger State, Nigeria. The results showed that both government and tertiary institutions 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 tertiary institutions 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 standard deviations scores of Management staff of government and State-owned tertiary institutions on the extent to which government collaborate with State-owned tertiary institutions, ranged from 0.57 to 0.105 indicating that the respondents were very far from the mean of one another in their responses

FINDINGS OF THE STUDY

1. The results revealed that the extent to which tertiary institutions collaborate

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



- with industries is quite encouraging as most of the items are greater than the criterion mean of 2.50 item 2, 3, 5 and 6 were accepted at high extent while item 1 accepted at moderate extent and finally, it was discovered that item 7 was rejected; hence, the collaboration is to a high extent.
2. The results showed that both tertiary schools and government Management staff accepted that the extent to which tertiary institutions collaborate with government is quite encouraging as all the items are greater than the criterion mean of 2.50 as item 1, 2, 4, 6 and 7 were accepted at high extent while item 3, 5 and 8 were accepted at moderate extent, hence the collaboration was to a high extent with average mean of 3.21.
 3. The results showed that both industries and tertiary institutions Management staff accepted that industries collaborate with tertiary institutions to a high extent on items 3, 4 and 5. They also accepted that industries collaborate with tertiary institutions to a moderate extent on other items, hence the collaboration between the industries and tertiary institutions was at moderate extent with average mean of 2.78
 4. The results showed that both government and tertiary institutions Management staff accepted that government collaborate with universities to a high extent on only items 1 and 2. While item 5,6 and 7 accepted that government collaborate with tertiary institutions to a moderate extent and item 3,4,8 and 9 to low extent, hence the collaboration between the government and tertiary institutions was to a moderate extent with mean of 2.62.

DISCUSSION OF FINDINGS

The findings of this study revealed that the tertiary institutions collaborate with the industries to high extent. These include: tertiary institutions 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 (2016); Babalola (2014), who succinctly asserted that tertiary institutions and industry can derive mutual benefits from partnerships to ensure sustainable development. Tripartite concept encourages innovative competitions between the State-owned tertiary institutions and the industries in the knowledge society. Osaula (2016) disagree with Babalola view that even with the collaboration between the State-owned tertiary institutions and the industries in the provision of funds and infrastructural facilities there is still no doubt that most of the tertiary institutions of learning struggle to attain their educational goals and objectives and many of our graduates are still as job seekers not as a job creator.

The findings from table revealed the extent to which tertiary institutions collaborate with government was to a high extent. These collaboration 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 tertiary institutions help the government to train entrepreneurs (students), who can be self-employed; tertiary institutions 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 tertiary institutions also leverage the government by generating internal revenues through their business enterprises. These findings are in agreement with Barrioluengo *et al* (2016) who emphasised that universities are expected to fulfil an ever-growing spectrum of roles to the government such as: educate and

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



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. In disagreement with the above statement Prigge (2015) asserted that even with the collaboration between the State-owned tertiary institutions and the Government, they are still finding it difficult to pay their workers' salaries and other allowances of which this has been documented that these institutions suffer from low output and quality of research due to poor funding of research development.

Another finding of this study from table 3 revealed the extent to which industries collaborate with tertiary institutions 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 (2013), 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, Shinn (2017) 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- tertiary institutions collaboration is to a low extent in the following areas: leveraging universities with funds for research development; making the tertiary institutions become entrepreneurial ones through their collaborative relationship; partnering with tertiary institutions 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 (2015), 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 the study on table 4 finally revealed that the extent to which government collaborates with universities is moderate. These include: government formulates educational policies and programmes for tertiary institutions; 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. Barrioluengo *et al* (2016) also disagreed with the above finding, they suggested that if one re-examine the role of government in education and the growth of governmental responsibility in so many area as promised it has been unbalanced. 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 Akram, (2016), who posited that another interesting aspect of tripartite collaboration 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. Babalola (2018), maintained that Nigerian universities are squeezed between expanding responsibilities and dwindling resources.

CONCLUSION

Based on the findings of this study it can reasonably be concluded that the extent, to which tertiary institutions-industry-government collaborate for sustainable national development was quite moderate. It can therefore be deduced that state owned tertiary institutions in Niger State partnership with these key actors needs to be revamped in

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



order to achieve the laudable Nigerian educational goals and with an increasingly understanding of the Governments that the entire educational system from early childhood through tertiary education need to reflect the new social and economic needs of the global knowledge economy, which increasingly demands a better-trained, more skilled, and adaptable workforce and both policies and academic degrees need to be strategically tailored to fit the needs of the society and economy.

RECOMMENDATIONS

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

1. State owned tertiary institutions in Niger State offering TVET courses should be more innovative by coming up with activities that can involve the industries to collaborate with them.
2. State owned tertiary institutions in Niger State offering TVET courses 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.

REFERENCES

- Akram, M. (2016). Formal education, skills development and vocationalisation: The missing link. *Journal of Humanities and Social Sciences* 2(8), 142-148
- Akinyemi A. O. (2016) The effects of emotional coaching technique and interpersonal psycho-therapy in the management of Academic stress among undergraduate in the South-West, Nigeria page
- Babalola, J. B. (2018). Improving higher education through stakeholders' collaboration. *African Journal of*

- Higher Education Studies and development (AJHESD)*, 2 (2), 1-18.
- Barrioluengo, M. S., Uyarra, E. & Kitagawa, F. (2016). *The evolution of triple helix dynamics: The case of English higher education institutions*. CIMR Research Working Paper Series. Birkbeck University of London.
- Retrieved on 19th February, 2020 from <http://www.bbk.ac.uk/innovationpublications/docs/WP32.pdf>
- Chen S-Y. (2012). *Contributing knowledge and knowledge workers: the role of Chinese universities in the knowledge economy*. London Review of Education, 10 (1): 101-112. Retrieved on 19th February, 2020 from http://www.educause.edu/ir/library/html/nlii_ar_2013/cometogether.asp doi:10.1080/14748460.2012.659062
- Chibuzor A. (2018). Vocational and Technical Education in Nigeria: History, Roles, Objectives & Problems. Nigeria Fact. Retrieved on the 16th June 2022n from <https://nigerianfact.com/vocational-and-technical-education-in-nigeria/>
- Claudia F. (2023) *The Federal Government's Role in Public Education* Related Study Materials <http://study.com/academy/lesson/the-federal-governments-role-in-public-education.html>
- Ethel, T. (2013). Nduka tasks FG on ASUU crises. *Educational Development Uniport weekly*, 15(8). 2-13.
- Etzkowitz, H. & Leydesdorff L. A. (2017). *Universities and the global knowledge economy: A triple helix of university—industry—government relations*. London: Cassell Academic. Retrieved on 19th February, 2020 from <https://core.ac.uk/download/pdf/11888706.pdf>
- Federal Republic of Nigeria (2014). National Policy on Education. Lagos: NERDC Press.
- Lawal, A.W. (2017). Technical and vocational Education, a total for National

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved



- Development in Nigeria: *Mediterranean Journal of social sciences, Rome, Italy, 4(8)*. 35-47.
- Magatakarda, A. (2017). *A vocational approach to Entrepreneurship Development*. Sokoto, Usmanu Dan-fodiyo University Press Ltd.
- Oguntuyi, A. N. (2014). A viable Vocational Technical Education Curriculum: A tool for economic and Technology Development in Nigeria: *Scholarly Journal of Education, 2(12)* 67-76.
- Okoye, U. R. E and Uduodo, E. S (2015). Vocationalization of Secondary Education in Nigeria: Issues, challenges and prospects. *Journal of Education and practice. 6(30)*. 59-65
- Onuka, O. U. A. (2016). *Stakeholders' perception of fund mobilisation in Nigerian public universities*. In S. Oni (Ed.). *Revitalising Nigerian education in digital age*. Canada: Trafford Publishing.
- Onyeike, V. C. & Adieme, F. G. (2018). Brain gain and sustainable development of Nigeria University Education. *Journal of Education Review, 7(3)*, 409-415.
- Osuala (2016) Analyses of Students' Responses to Free Tertiary Educational Opportunity in Imo State. Unpublished thesis of the University of Port Hatrcourt Rivers State Nigeria.
- Prigge, G. W. & Torracco, R. J. (2016). University-industry partnerships: A study of how top American Research Universities establish and maintain successful partnerships. *Journal of Higher Education Outreach and Engagement, 11 (2)*, 89-100.
- Prigge, G. W. (2015). University-industry partnerships: What do they mean to universities? A review of the literature. *Industry and Higher Education, 19 (3)*, 221—229.
- Shinn T. (2017). The Triple Helix and New Production of Knowledge: Prepackaged Thinking on Science and Technology. *Social Studies of Science Journal. 32 (4)*: 599-614.

Corresponding author: Shaluko, Yohanna Doma

✉ abramis@gmail.com

School of Technical Education, Department of Electrical Electronics, Niger State College of Education, Minna.

© 2022. Faculty of Technology Education. ATBU Bauchi. All rights reserved