



Sustainable Financing of TVET to Support Skills Development among Vocational and Technical Education Students amidst a dwindling Economy

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Abstract: In an effort to promote the development of skills among Vocational and Technical students of Colleges of Education (COEs) in Nigeria, this article focused on the evaluation of the most suitable means of financing Technical and Vocational Education and Training (TVET) amidst dwindling economy. The study employed a descriptive survey research design. Mean and standard deviation was used to answer the research questions while Analysis of Covariance (ANOVA) were used to test the hypothesis at .05 level of significance. The researcher solicited for data from six Head of Departments (HOD), 34 Lecturers and five Directors of Academic Planning (DAP) of five COEs to provide answers to the most suitable methods of funding TVET. The instrument for the data collection was a structured questionnaire. The reliability of the instrument was determined using Cronbach alpha method which yielded Cronbach alpha coefficient of .87. The findings revealed that poor funding of the TVET sector in the COEs in North Central Nigeria had compromised the delivery of quality TVET. Hence, Government grants and Provision of special TVET TETFund among others were identified as the suitable means of funding TVET in COEs. It was recommended that adopting a germane source of financing TVET as identified in the current study would go a long way in sustaining TVET toward efficient production of graduates for the world of work. The findings would positively contribute towards resolving a myriad of financing challenges that are ravaging COE training providers to change TVET systems to yield the desired developmental outcomes.

Keywords: Dwindling Economy, Skills Development, Sustainable finance, TVET, Vocational Education

1. Introduction

Technical and Vocational Education and Training (TVET) plays a crucial role in developing skilled human resources and fostering economic growth. However, ensuring sustainable financing for TVET programs, particularly in times of economic downturn, can be challenging. This background study explores the importance of sustainable financing for TVET and the strategies employed to support skills development among vocational and technical education students amidst a dwindling economy. TVET is the study of technology, related sciences and acquisition of practical skills, attitudes and knowledge relating to occupation in the various sectors of the economy and social life (Ohagwu & Nwanesi, 2023). TVET is aimed at providing skilled workforce in applied sciences, engineering, technology and commerce (Omovigho Igberaharha, 2021; Oviawe, 2020). TVET is the aspect of education that leads to the acquisition of practical and applied skills as well as basic scientific knowledge (Omovigho Igberaharha, 2021; Omar et al., 2020; Zahar, & Rashid, 2020). These definitions are core explanations of TVET in the context of the present study

Since education is considered the key to effective development, TVET must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help improve the economy through the labour market outcomes (Oviawe, 2020). (Oviawe, 2020) avers that technological and industrial development of any nation requires a workforce that possesses the right skills, knowledge and attitude of the world of work. This can only be possible by improving the quality of TVET programmes through adequate funding especially amidst dwindling economy as in Nigeria today. TVET is an accepted important conduit for delivering social parity, access, inclusion and sustainable development (Mubanga, 2019).

There is growing interest in sustainability and sustainable development in the academic and policy literature. Sustainability denotes a philosophy, approach or practice that guides the use of today's resources in an efficient manner to ensure that resources are available and sufficient to meet today's needs and the needs of future generations (Mensah, 2019). Sustainability is also explained as the ability to make responsible decisions in using and allocating resources to economic and non-economic activities in an effort to achieve certain desired social, economic and environmental outcomes (Grant 2010), career sustainability (Tordera et al., 2020), urban sustainability and (Uwizera et al., 2022). Sustainability is expected to pave way for sustainable financing of TVET amidst dwindling economy to support skills development among TVET practitioners.

Staffing, buildings, other critical infrastructure, machinery, tools, equipment, learning materials are important resources that should be financed and made available in colleges of Education for effective instructional delivery of the contents of TVET. The sustainable financing of TVET is crucial for supporting skills development among VET students, aligning with SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth) (UN, 2015). TVET has a cardinal part to contribute to the realization of the 2030 SDGs (Kropinova, 2021). However, numerous challenges are encountered in developing workable financing mechanisms to change TVET systems to yield the desired developmental outcomes, mainly due to inadequate parliamentary appropriations to vocational training compared to other forms of higher education.

Sustainable financing of TVET to support skills development among VET students amidst a dwindling economy is relevant to Nigeria's continued development for several reasons: Nigeria has a high youth unemployment rate ((Savelieva & Zaharov, 2022). TVET can equip young people with skills for employment, entrepreneurship, or further education, aligning with SDG 8 (Decent Work and Economic Growth) (Kreinin & Aigner, 2022); Nigeria's economy is heavily reliant on oil exports ((Mensah, 2019). TVET can support diversification by developing skills in other sectors, such as agriculture, manufacturing, and services ((Zubair, 2014); By providing skills training, TVET can help reduce poverty and inequality, aligning with SDG 1 (No Poverty) and SDG 10 (Reduced Inequalities) (Kreinin & Aigner, 2022); In extension, investing in TVET enhances Nigeria's human capital, essential for economic growth, innovation, and competitiveness (Oviawe, 2020). Lastly, TVET can address skills gaps in key industries, such as construction, healthcare, and technology, supporting Nigeria's economic development (Kreinin & Aigner, 2022). This work is therefore, anchored on some germane Theories as discussed below.

Skills Development Framework emphasizes the importance of skills development in achieving economic growth, poverty reduction, and social inclusion ((Madu & Edokpolor, 2021); Sustainable Financing Theory highlights the need for sustainable financing mechanisms to support long-term development goals, such as education and training ((Zubair, 2014) while TVET for Development (TVET4D) Framework emphasizes the role of TVET in promoting economic growth, poverty reduction, and social inclusion, particularly in developing countries ((Alagaraja et al., 2014). As such, funding TVET is inevitable for promoting economic growth and poverty reduction among the graduates.

TVET funding in most developing countries is usually from three key sources comprising government grants, student fees, and the private sector. There are other sources consisting of employee contributions, private donations, internally generated income, and external assistance (development grants and co-operating partner loans (Mubanga, 2019). In Nigeria, the primary source of funds in many public TVET institutions significantly is government funding, while student fees constitute the major source of funds for privately owned training providers (Mubanga, 2019). (Oviawe, 2020) supported that Government, politicians, individual donation/parents, firms, grants, and external aid are the sources of financing TVET in Nigeria. Apart from government fund, others may not be a constant and reliable sources of funding TVET. Hence, a serious challenge to the TVET sector in Nigeria. TVET needs steady source of funds to equip the sector with machines/equipment, instructional material, employ staff and take good care of their welfare.

Implementation of TVET is successful only when lecturers who are the implementers of the TVET content are adequately taken care of while the Directors of Academic Planning (DAPs) of each COE are supposed lobby for adequate TETFunds to mitigate the challenges of financing TVET. Quite unfortunate, TETFunds does not favour TVET sectors in the COEs as expected. During economic downturns, governments often face budgetary constraints, leading to reduced funding for education, including TVET (Anyiendah et al., 2023). This can adversely impact the quality of TVET programs, limiting access to essential resources and hampering students' skill development (Madu & Edokpolor, 2021). These anomalies needs to be amended. Hence the need for this study to determine the most suitable source of financing TVET in COEs amidst dwindling economy.

1.1. Statement of Problem

TVET in the Colleges of Education is supposed to be pampered, well equipped with workshops and Laboratories for practical purpose. Lecturers in this sector need to be well motivated by given some incentives and be sponsored through TETFunds for update on the job. TVET, being a lucrative sector and critical in the development of a Nation requires a suitable means of funding that is reliable and germane.

Unfortunately, TVET have suffered and is still suffering seriously from neglect at the post-independence era to this current dwindling democratic setting. Education in general suffered neglect because of in-adequate funding, but that of TVET has been worse. The political class played ethnic and party politics and diverted funds to party and personal use. Corruption index among the ruling classes is a by-word in Nigeria to the detriment of TVET development in the country. There has so far seems to be no germane source of funding TVET as at the time of this study. Therefore, the study explored the suitable means of funding TVET in COEs in North central Nigeria

1.2. Purpose of the Study

The general purpose of the study is to find out a sustainable means of financing TVET to support skills development among TVET PR actioners in COEs amidst dwindling economy in North central of Nigeria. Specifically, the study sort to find out:

- (a) the needs for funding of TVET in Colleges of Education in North central Nigeria
- (b) the suitable means of funding TVET in COEs in North central Nigeria
- (c) the means to ameliorate the challenges to funding TVET in COEs in North central

1.3. Research Questions

The following research questions guided the study:

- (a) What are the needs for funding of TVET in Colleges of Education in North central Nigeria?
- (b) What are the suitable means of funding TVET in COEs in North central Nigeria?
- (c) What are the means to ameliorate the challenges to funding TVET in COEs in North central?

1.4. Hypotheses

One null hypothesis guided the study:

H₀. Significance difference does not exist in the mean scores of HODs, Lecturers and DAPs on the suitable means of funding TVET in COEs in Nigeria

2. Materials and Methods

1.1. Design for the Study

The study adopted a descriptive survey research design. Descriptive survey research is a suitable method for gathering information about a particular population or phenomenon because it provides a snapshot of the current situation (Babbie, 2016). It also allows for the collection of data from a large sample size (Fowler, 2014).

2.1.1. Ethics Statement

The Institution Based Research (IBR) committee approved the study protocol, informed consent forms, and all other relevant study materials to ensure compliance with ethical standard study

2.2. Area of the Study

The study was conducted in North central Nigeria to include five Colleges of Education that are TETFund beneficiaries and offers vocational and Technical Education in the various schools

2.3. Population and Sample

The population for the study was 45 participants which consisted of six Head of Departments (HOD), 34 senior Lecturers and five Directors of Academic Planning (DAP) of five COEs in North central, Nigeria to provide answers to the most suitable methods of funding TVET. The population for the study was obtained through a purposeful sampling technique. The chosen sample size is purpose as to meet the purpose of the study. The participants are true indices of curriculum planning and implementation in the COEs in the study area.

2.4. Instrument for Data Collection and Study Procedure

The instrument for the data collection was a structured questionnaire. Each item in the questionnaire was assigned a four response options of Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2) and Strongly Disagree (SD = 1). The instrument was faced validated by three experts, one from College of Education Gindiri, and two from the department of Science and Technical Education, University of Jos. The experts evaluated the instrument for clarity and the suitability of the questionnaire items, and their recommendations were used to restructure and produced the required questionnaire. The instrument's reliability was assessed using the Cronbach alpha method, which produced a result of 0.87.

2.5. Data Collection Technique

Two research assistants were brief on hoe to collect and administer the questionnaire. The instrument was administered to the respondents and collected within four days with the help of research assistants to avoid loss of data.

2.6. Data Analysis Technique

Mean and standard deviation was used to answer the research questions while Analysis of variance (ANOVA) was used to test the hypothesis at .05 level of significance. The Statistical Package for Social Science (v25.0) was used for the analysis. Items with mean values equal to or greater than 3.50 were regarded as strongly agreed, ranging from 2.50 - 3.49 as agreed 1.50 - 2.49 as disagree; and equal to or less than 1.49 as strongly disagree. Hence, the benchmark of 2.50 was used as the decision rule.

3. Results and Discussion

Table 1: Mean and Standard Deviation of response on the needs for funding of TVET in Colleges of Education in Nigeria

S/N	The need to fund TVET in COEs should include:	\bar{x}	SD	RM
1	Sustainable research efforts in TVET programme.	3.20	.42	A
2	Students' industrial training support	3.21	.82	A
3	Staff capacity building.	3.23	.43	A
4	Achievement of TVET programmes goals and objectives	3.28	.56	A
5	Curriculum implementation with respect to the content, instrument, tools and materials.	3.36	.70	A
6	Training of students with modern equipment including emerging technologies to meet the demands of the ever-dynamic workplace	3.47	.50	A
7	Preparing and equipping lecturers and students with necessary skills.	3.53	.63	A
8	Knowledge competency and skills required for employment after graduation.	3.22	.81	A
9	Production of skilled workforce for self-reliance	3.37	.70	A
	Cluster mean	3.32	.62	A

N.B: A = Agrees; D = Disagree

3.1. Description/discussion

Findings of Table shows that all items are the needs for funding of TVET in Colleges of Education in North central of Nigeria as evidence in respective mean and standard deviations. The grand mean value of respondents in Table 1 was greater than 2.50. This further confirms that all the items are the needs for funding TVET in COEs in North central Nigeria. Hence the present study revealed that sustainable research efforts in TVET programme, students' industrial training support and staff capacity building were prominent among the needs for funding TVET in COEs in North central Nigeria. This finding concurred with the findings of (Oviawe, 2020) who affirmed that donations of tools, equipment and other learning materials from alumni associations, foreign assistance, public private partnership, skill development levy, currency transaction levy and solidarity levy were some of the sources of funding TVET. In extension, (Okolie et al., 2020) professed that problem based learning and TVET programmes may not be well implemented without proper funding and provision of modern teaching and learning materials, tools, and machines. As such, the Federal government should consider the TVET sector as a special area of need for human development and economic growth of the country there by providing the needed fund for its implementation in the COEs. Furthermore, the sustainable financing of TVET is crucial for supporting skills development among VET students, aligning with SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth) (UN, 2015). TVET has a cardinal part to contribute to the realization of the 2030 SDGs (Kropinova, 2021)

Table 2: Table 2: Mean and Standard Deviation of response on the suitable means of funding TVET in COEs in Nigeria

S/N	Suitable mans of funding TVET in COEs should include:	\bar{x}	SD	RM
1	Government grants	3.26	.68	A
2	TVET Special Fund	3.55	.42	A
3	Provision of constant TETFund from the government	3.49	.50	A
4	Employee contributions	2.11	.72	D
5	Student fees	2.02	.71	D
6	External assistance in the form of donor grants or NGOs donations and other cooperating partner loans	3.26	..54	A
7	Internally generated Income from services offered by training	2.33	.67	D
8	Companies contributions (skills levy)	2.22	.61	D

N.B: A = Agrees; D = Disagree

3.2. Description/discussion

Result of Table 2 shows that item 4, 5, 7 and 8 where not suitable means of funding TVET in the COEs in North central of Nigeria as evidence in respective mean and standard deviations. TVET Special Fund (\bar{x} 3.55, SD .42; was the most suitable means followed by provision of constant TETFund from the government with (\bar{x} 3.49, SD .50). Technical and Vocational Education and Training (TVET), and Entrepreneurship Education are vital components in the economic development equation of any country. However, these training systems can only be effective where sustainable methods of financing TVET and entrepreneurship training are in place. In order to obtain information on the most appropriate methods of funding skills development in the two specific skills categories, it was deemed necessary and important to obtain reliable empirical quantitative and qualitative data from the government officers, the industry experts and administrators in vocational institutions according to (Mubanga, et. al 2019). The findings of (Mubanga, et. al. 2019) support the finding of the present study where data was collected from senior lecturers, Directors of academic planning and HOD of COEs in North central Nigeria which ascertained the most suitable means of funding TVET in these institutions. The result of the present study depicts that provision of constant TETFund from the government and TVET Special Fund were the most suitable means of funding TVET. Other suitable means included Government grant and external assistance in the form of donor grants or NGOs donations and other cooperating partner loans. Therefore, TVET programmes require substantial financial resources to maintain and enhance the quality of education, infrastructure, equipment, and human resources (UNESCO, 2018). In extension, adequate funding is essential to ensure that students acquire the necessary skills and competencies to meet the demands of the labor market (Itua, 2013). Sustainable Financing Theory highlights the need for sustainable financing mechanisms to support long-term development goals, such as education and training ((Zubair, 2014) while TVET for Development (TVET4D) Framework emphasizes the role of TVET in promoting economic. The theory above supports the findings of this study in that regards.

Table 3: ANOVA summary of responses of lecturers, HODs and DAP on Suitable means of funding TVET in COEs

	Sum of squares	df	Mean Square	F	Sig.
Between Groups	.056	2	.028	.516	.597
Within Groups	15.854	290	.055		
Total	15.911	292			

3.3. Description/discussion

The data in Table 3 presented Sig. values of $.597 > .05$. This depicts that there is no significant difference between the mean scores of Lecturers, HODs and DAPs on Suitable means of funding TVET in COEs. The views of the respondents did not vary. The hypothesis of no significant difference was therefore upheld.

Table 4: Mean and Standard Deviation of response on the ways of ameliorating the challenges facing the funding of TVET in COEs

S/N	Ways of ameliorating the challenges facing the funding of TVET in COEs	\bar{x}	SD	RM
1	Government should concretize a reliable source for funding TVET in the COEs such as special TVETFund	3.28	.67	A
2	DAPs in collaboration with the College management should prepare an adequate financial need for the TVET sector for government approval each year	3.45	.68	A
3	NGOs grants to TVET sector be made constantly to the sector	3.50	.50	A
4	Provision of seed money (newly accredited programmes	2.44	.89	A
5	TVET should form a huge percentage in TETFund for training of Teachers as well as the procurement of workshop facilities	3.02	.71	A
6	Policy be made to include TVET sector in the budget	3.26	.54	A
	Cluster mean	3.33	.67	A

N.B: A = Agrees; D = Disagree

3.4. Description/discussion

Findings of Table 4 shows that all items suggest the ways of ameliorating the challenges facing the funding of TVET in COEs as evidence in respective mean and standard deviations as well as the grand mean value of respondents which was greater than 2.50. Improved funding of TVET programmes, employment of qualified TVET lecturers in TVET department as well as adequate provision of facilities and equipment for the implementation were among the strategies to curb the menace of funding TVET programmes as affirmed by (Omovigho Igberaharha, 2021). The aforementioned strategies are not far from the findings of the present study were the findings found that Government needs to concretize a reliable source for funding TVET in the COEs such as special TVETFund while DAPs in collaboration with the College management should prepare an adequate financial need for the TVET sector for government approval each year.

Implication:

The study's findings have significant implications for TVET financing policies and practices in Nigeria and similar developing countries. The identification of government grants, TVET special funds, and constant TETFund as suitable means of funding TVET highlights the need for governments to prioritize TVET financing and explore alternative funding sources.

Limitation:

The study's limitations include its focus on North Central Nigeria, which may not be representative of other regions in the country. Additionally, the sample size was relatively small, and the study relied on self-reported data from participants. However, this does not diminish the reality of the result.

Suggestions for further studies:

1. Replicate the study in other regions of Nigeria to increase generalizability.
2. Conduct in-depth interviews or focus groups to gather more nuanced insights into TVET financing challenges and solutions.
3. Investigate the impact of TVET financing on student outcomes and employment rates.
4. Explore innovative funding models, such as public-private partnerships or crowd funding, to support TVET programmes.
5. Analyze the policy and regulatory frameworks governing TVET financing in Nigeria and identify areas for improvement.

4. Conclusion

Technical and Vocational Education and Training (TVET), and Entrepreneurship Education are vital components in the economic development equation of any country. However, these training systems can only be effective where sustainable methods of financing TVET and entrepreneurship training are in place. Consequent upon these, the present study revealed that provision of constant TETFund from the government and TVET Special Fund were the most suitable means of funding TVET. Sustainable research efforts in TVET programme, students' industrial training support and staff capacity building were prominent among the needs for funding TVET in COEs in North central Nigeria. It was recommended that in other to ameliorate of funding TVET, Government should concretize a reliable source for funding TVET in the COEs such as special TVETFund while DAPs in collaboration with the College management should prepare an adequate financial need for the TVET sector for government approval each year.

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Conflict of Interest

The authors declare no potential conflict of interest

Author Contributions

The first author who doubles as the corresponding author wrote the background, analyzed the data, discussed the findings while the second author edited the work and contributed financially.

Data Availability Statement

The data used for this study is much available based on request from the researchers

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