



TVET FINANCING AND SUSTAINABLE DEVELOPMENT IN NIGERIA

ADEBAMIWI, Oluwole Daniel, ABUBAKAR, Ibrahim, OGUNDEYI, Damilola Stephen & SANYAOLU, Samson Olusegun.

Department of Banking and Finance, Accountancy Federal Polytechnic Ilaro, Ogun State, Nigeria

Email: daniel.adebamiwi@federalpolyilaro.edu.ng; Ibrahim.abubakar@federalpolyilaro.edu.ng;
ogundeyi.damilola@yahoo.com; Samsheggz@gmail.com

ABSTRACT

This study assessed the impact of technical vocational education and training on sustainable development in Nigeria using time data from 1999-2022. The variables such as human development index (proxy for sustainable development), infrastructure and resources, innovation and entrepreneurship and quality training were captured in the study. Data were collected from World Bank Indicator and CBN Statistical bulletin 2023, Ordinary Least Square (OLS) method of estimation was employed for the study due to the nature of the data collated. An econometric view 9 was the statistical tool used to facilitate the result. The findings revealed that infrastructure and resources, innovation and entrepreneurship and quality training have positive and significant impact on human development index because their probability value is less than 0.05, the study concluded using f statistics result of 0.000000 that TVET financing has significant impact on sustainable development in Nigeria. The study, therefore recommended that by fostering a skilled, educated, and healthy population, quality training enhances personal and national development, leading to an improved HDI score and a higher overall standard of living.

Keywords: Technical Vocation, Education, Training, Sustainable development

Introduction

The investment environment economy and chances for national cohesion, growth, and sustainable development in Nigeria are all in jeopardy due to several problems that the country is now facing (Salabson, 2018). Human capital development in Nigeria rated 150 out of 157 nations in the world Human Capital Index (World Bank, 2022). This is on top of the country's high unemployment rate, increasing insecurity, and galloping inflation that are driving millions of young Nigerians into poverty (World Bank, 2022). An engaged labour force drives a nation's economy, and a productive workforce enables it to thrive (Islam, 2021). According to Ibecheozor (2020), Terna (2021) without a robust effort in creating wealth, reducing poverty, and generating jobs, no country can make technical, industrial, or economic progress. India enjoyed a demographic dividend since its population is mostly young (Cabral & Dhar, 2019) and they made sure to provide them with a proper education. Nigeria requires education and training to acquire worldwide prominence, decrease poverty, and generate jobs (Cabral & Dhar, 2019; Salabson, 2018). TVET has been given a low status within educational discourse by educators and policymakers in Africa who incorrectly see it as path for people who are unable to pursue academic programmes sub-sector (Olayele, 2022). Through education policy, the government of Nigeria expresses its dedication to TVET by stating one of its aims as being the provision of skilled workforce for economic growth (FRN, 2014). However, TVET has not been given the sufficient attention it needs by our leaders and politicians to reach its aim, which is one of the causes for the nation's bad economic situation and instability (Akanobong et al., 2022). This is even though TVET has contributed to economic and national development of most advanced world. Against this background, the TVET programme in Nigeria needs be redesigned so that it can generate workers who can keep the country stable, reducing unemployment, and growing the economy. Despite the numerous laudable and lofty educational policies formulated by the Federal Government of Nigeria coupled with the reforms already made for the improvement of the TVET sub-sector, the triadic goals of TVET in Nigeria are yet to be realized. Many scholars and stakeholders (parents, policymakers, teachers and employers of labour) have complained that its impacts are not much felt in the school system and the entire country. No significant improvements are observed in the learners at the end of their training programme. The result is inadequately and poorly trained (half baked) technical workforce that does not possess relevant skills for sustainable employment. This has increased the unemployment level in the country and at the same time posed security threats to the country which adversely affect sustainable development. Some studies such as Okorafor and Nnajiifo (2017), Anene-Okeakwa et al. (2020) and Adewale (2022) have attributed this problem to inadequate or obsolete policy provisions. Hence, there is dire need for reforms in TVET policies in Nigeria to improve the teaching and learning as well as the learning outcomes of this sub-education system. The main objective of the study is to examine the role of TVET financing and sustainable development in Nigeria. The specific objectives are; to determine the effect infrastructure and resources, innovation and entrepreneurship, quality training on sustainable development in Nigeria.

Literature review

Concept of Sustainable Development

An essential part of sustainable development is ensuring that the economy can continue to expand rapidly to meet its development and economic goals (Ishola et al., 2020). According to Kairo et al. (2022) sustainable development is "the process of gradual change in human quality of life that puts

people at the centre and main subjects of development," and it achieves this goal by balancing growth in the economy with societal equality and development. Conversely, development refers to the process of enhancing a country's, regions, or community's economic prosperity and standard of living (Onwuama, 2019). Anyim (2021) offers a similar definition of economic development to be a relentless dedication to enhancing the quality of human existence via the advancement of economic, political, socio-cultural, and public welfare. According to Agarwal (2020), Ezeji for and Ezekwesili (2022) a rise in the quality of life of the citizens of a country is often indicative of the nation's level of economic development, which is typically measured using the Human Development Index. The development of the economy is a crucial component of sustainable development (Ishola et al., 2020).

VTE as a veritable tool for national sustainable development

For the goals of sustainable development to be achieved there must be an educational programme whose goals are directed toward the achievement of economic growth of the citizens, skill acquisition and empowerments. The system of education in Nigeria as earlier state that provides training for skill acquisition, economic development, and emancipation of citizens from poverty is Technical and Vocational Education (TVE).

From its goals and objectives, TVE is a veritable tool to achieve sustainable development not only at a national level but globally. This is because the goals of Sustainable Development and that of TVE place emphasis on economic growth and development of individuals, which will eventually lead towards the betterment of humanity in general. Kehinde and Adewuyi (2015) believes that Vocational and technical education has been integral part of national development strategies in many societies because of the impact on human resource development, productivity and economic development. It holds the key to national development of most nations. In the same vein, Vijay (2017) states that, Technical Education is instrumental in making the remarkable contribution to economic growth of the Developing Countries by way of suitable manpower production according to the needs of the Industry, Society and the Global World as a whole.

Theoretically, the study is underpinned by the human capital theory, was primarily introduced during the 1950s and early 1960s by Gary Becker and Theodore Schultz. This theory demonstrates how education can boost the productivity and efficiency of workers by enhancing their cognitive skills. Scholars like Theodore Schultz, Gory Buckner, and Jacob Mincer introduced the concept that individuals invest in education to augment their set of human capabilities, which is formed by combining innate abilities with investments in human development (Babalola, 2000). These investments can take various forms, including expenditures on education, on-the-job training, health, and nutrition. However, the stock of human capital only increases over time when gross investment exceeds depreciation. Education is considered a productive investment in human capital and is regarded by proponents of the human capital theory as equally or even more worthwhile than investments in physical capital.

Empirically, Udoudo and Ikeji (2023) determined the relevance of policy reforms in Technical Vocational Education and Training for sustainable development in Abia State, Nigeria. The survey research design was used. The population of the study consisted of 4,302 persons made up of 300 officers of Vocational Technical Education Boards and 4,002 teachers of vocational subjects in all the Vocational Technical schools in Abia State in the 2020/2021 academic year. The sample comprised 356 respondents made up of 32 Vocational Technical Education Boards staff and 324 vocational teachers. The findings showed that reforms are needed in 10 areas of the TVET policy;

and that TVET policy reforms are useful for sustainable development in 10 ways. Also, 10 challenges against achievement of TVET policy objectives were found. The researchers concluded that there is dire need for reforms in Nigeria's TVET policy in the ten areas identified in this study in order to facilitate sustainable development in Abia State and the entire country. It was recommended among others, that the Federal Ministry of Education should initiate moves for significant reforms in Technical Vocational Education and Training policy in Nigeria as soon as is practicable.

Methodology

This study is on Technical Vocational Education and Training on sustainable development in Nigeria using time series data from 1999 to 2022. The dependent variable is human development index, while the independent are: infrastructure and resources, innovation and entrepreneurship and quality of training.

In order to test the hypotheses, the variables were built into a functional relationship.

The model is specified as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots \beta_n X_n + \mu \dots \dots \dots (1)$$

Where;

Y = Dependent variable

X₁. X₃= Explanatory variables

The functional relationship of the above model is as follows:

$$HDI = f(IR, IE, QT) \dots \dots \dots (2)$$

In econometric term

$$HDI = \beta_0 + \beta_1 IR + \beta_2 IE + \beta_3 QT + \mu \dots \dots \dots (3)$$

Where;

HDI = Human Development Index (proxy for sustainable development)

IR = Infrastructure and Resources

IE = Innovation and Entrepreneurship

QT = Quality Training

β₀ = Constant term

β₁ – β₃ = Coefficient of explanatory variables

μ = Error term

Presentation of Results

Table 1 Descriptive Statistics

	HDI	IR	IE	QT
Mean	0.527292	1386.750	2.33E+08	50.61271
Median	0.514000	1354.356	2.34E+08	51.15100
Maximum	0.655000	1846.351	3.77E+08	53.63300

Minimum	0.450000	1060.830	43100000	46.61400
Std. Dev.	0.060307	251.8951	94231952	2.011185
Skewness	1.132569	0.322700	-0.230178	-0.483754
Kurtosis	3.163135	1.819216	2.343686	2.083597
Jarque-Bera	5.157461	1.810792	0.642675	1.775867
Probability	0.075870	0.404382	0.725178	0.411505
Sum	12.65500	33282.01	5.59E+09	1214.705
Sum Sq. Dev.	0.083649	1459377.	2.04E+17	93.03187
Observations	24	24	24	24

Source: Authors' Computation using E views 9

The given data provides a summary of four variables, Human Development Index (HDI), Infrastructure and Resources (IR), Innovation and Entrepreneurship (IE), and Quality Training (QT). The mean values of the variables provide insights into their typical levels. HDI averages at 0.527292, indicating a moderate overall investment. Infrastructure and Resources demonstrate a mean value of 1386.750. Innovation and Entrepreneurship, with an average of 2.33E+08. Quality Training, averaging at 50.61271. The standard deviation, a measure of the dispersion or spread of data points, provides additional insight into the volatility of the economic indicators. For Human Development Index (FDI), the standard deviation of 0.060307 indicates a moderate degree of variability around the mean value of 0.527292. In the case of Infrastructure and Resources (IR), the considerably higher standard deviation of about 251.8951 signifies a elements that support economic development and the functioning of the societies. The standard deviation of around 94231952 for Innovation and Entrepreneurship (IE) highlights creating new ideas or improvement, involves turning the ideas to various opportunities. Quality Training (QT) displays a standard deviation of approximately 2.011185, indicating the goals of quality training to foster excellence and reduce errors. Skewness, a measure of asymmetry, demonstrates that IR, IE, and QS distributions are positively skewed, indicating a prevalence of higher values in these indicators.

Table 2: Regression Analysis

Dependent Variable: HDI

Method: Least Squares

Date: 10/16/24 Time: 08:21

Sample (adjusted): 1 24

Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.010649	2.335728	3.001484	0.0071

IR	-0.000832	0.000303	-2.744372	0.0125
IE	-3.73E-10	1.40E-10	-2.673598	0.0146
QT	-0.103576	0.037959	-2.728605	0.0129
R-squared	0.507471	Mean dependent var	0.527292	
Adjusted R-squared	0.433591	S.D. dependent var	0.060307	
S.E. of regression	0.045387	Akaike info criterion	-3.196171	
Sum squared resid	0.041200	Schwarz criterion	-2.999829	
Log likelihood	42.35406	Hannan-Quinn criter.	-3.144082	
F-statistic	6.868911	Durbin-Watson stat	1.315583	
Prob(F-statistic)	0.002308			

Source: Authors' Computation using E-views 9, 2024

The results indicate that when all independent variables are at zero, HDI is expected to be 7.010649units, as denoted by the intercept (C). The coefficient for IR reveals that a one-unit increase in the Infrastructure and Resources leads to a decrease in HDI by 0.000832 units. Similarly, the coefficient for IE suggests that a one-unit increase in Innovation and Entrepreneurship results in a modest decrease of 3.73E-10units in HDI, though this effect is statistically significant. Notably, the coefficient for Quality Training indicates that a one-unit increase in quality training corresponds to a significant decrease of 0.103576units in HDI, with a p-value marginally below the conventional significance level of 0.05, indicating a possible relationship.

Discussion of Findings

From the OLS results, it was discovered that two independent variables are stationary at first order difference I(1). The ADF co-integration procedure was used to examine whether there is any potential long run relationships between the variables. The trace results confirm that there is long run relationship between the variables. The regression result shows that Infrastructure and resources (IR) is statistically significant, since the p value of 0.0125 which is less than 5% level of significance. Also, innovation and entrepreneurship is statistically significant, since the p value of 0.0146 which is less than 5% level of significance. Quality training is statistically significant because their p value of 0.0129 is lesser than 5% level of significance. The result also revealed that the adopted independent variables best explains the model with the high value of the R^2 at 51%. Furthermore, the f statistics indicates the overall significance of the adopted explanatory variables and the result confirmed that the model is highly significant, because the probability value (0.002308) is less than 5% level of significance.

Conclusion

The study investigated the impact of technical vocational education and training on sustainable development in Nigeria. The research addressed a pressing issue by investigating the impact of infrastructure and resources, innovation and entrepreneurship, and quality training on the country's human development index (HDI). The findings presented a complex picture, revealing negative relationship but significant impact of infrastructure and resources on human development index (HDI), while innovation and entrepreneurship and quality training demonstrated negative but significant impacts on human development index (HDI). The results underscore the need for more

strategic policy interventions aimed at improving the quality of infrastructure and resources, innovation and entrepreneurship, and increasing quality training. It is evident that investing in TVET is paramount for fostering economic growth and development in the country. Based on the findings of this study, the following recommendations are hereby discussed below;

- i. The study suggests that there is a significant and negative relationship between Infrastructure and resources (IR) and human development index (HDI). Policymakers in Nigeria should consider increasing investment in Infrastructure and resources, focusing on improving the quality of education and educational infrastructure.
- ii. While innovation and entrepreneurship showed a negative but significant impact on HDI, the result implies that innovation and entrepreneurship have a cascading impact on HDI by raising income levels, improving educational access and enhancing health outcomes.
- iii. Lastly, quality training has positive significant impact on HDI. Quality training directly strengthens the education, income, and health components of the HDI. By fostering a skilled, educated, and healthy population, quality training enhances personal and national development, leading to an improved HDI score and a higher overall standard of living.

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