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Impact of TVET Reforms on Youth Employment in Post-Pandemic Nigeria: An Empirical Analysis

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Abstract:

This study examines the transformative impact of post-pandemic Technical and Vocational Education and Training (TVET) reforms on youth employment trajectories in Ogun State, Nigeria. While the COVID-19 pandemic accelerated the shift toward a digital economy, the efficacy of institutional responses in bridging the subsequent education-to-work gap remains an urgent area of inquiry. Anchored on Human Capital Theory and the Systems Theory of Vocational Education, the research utilizes a cross-sectional dataset from 384 respondents (aged 18–35). The analysis employs Binary Logistic Regression and Structural Equation Modeling (SEM) to isolate the influence of digital skills acquisition, entrepreneurship training, and public-private partnerships (PPPs) on employment outcomes. Empirical results reveal that all three reform dimensions serve as potent predictors of employability. Logistic regression analysis indicates that digital skills training exerts the most significant influence ($\beta_1 = 0.984, p < 0.01$), making participants nearly three times more likely to secure employment (2.676). Furthermore, entrepreneurship training ($\beta_2 = 0.811, p < 0.01$) and PPPs ($\beta_3 = 0.694, p < 0.05$) significantly enhanced self-employment potential and curriculum relevance. These findings validate the "Skill-Logic" assertion that institutional synergy and targeted upskilling yield measurable gains in a volatile post-pandemic labour market. The study fills a critical empirical void by demonstrating that post-pandemic recovery is linked to high-fidelity technical literacy. The results advocate for a shift toward institutionalized entrepreneurship ecosystems and structured PPP mechanisms, offering a replicable framework for scaling youth employment initiatives in developing economies.

Keywords: COVID-19, digital skills, entrepreneurship training, TVET, youth employment.

1. Introduction

The COVID-19 pandemic significantly disrupted global labour markets, with Nigeria experiencing a sharp surge in unemployment, particularly among youth aged 18–35. According to the National Bureau of Statistics (NBS, 2021), Nigeria's unemployment rate rose to 33.3% by the end of 2021, with youth unemployment even higher. The pandemic intensified structural weaknesses in Nigeria's labour market, including a poorly aligned education-to-work pipeline, limited industrial absorption capacity, and insufficient practical skill development (ILO, 2022; World Bank, 2023).

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As a national imperative, attention has turned toward Technical and Vocational Education and Training (TVET) as a strategic tool to address this crisis. Post-pandemic TVET reforms in Nigeria have prioritized digital literacy, entrepreneurship training, and enhanced public-private partnerships to bridge the skills gap and improve youth employability (UNESCO-UNEVOC, 2022). These reforms align with global best practices that emphasize adaptability, technological competence, and industry relevance as pillars for resilient and inclusive labour markets (Afeti & Adubra, 2021).

Despite commendable policy shifts and donor-supported reforms in the Nigerian TVET sector, youth unemployment remains alarmingly high. While several initiatives have targeted skill development, the extent to which these reforms translate into actual labour market inclusion for Nigerian youth remains unclear. Current literature predominantly offers descriptive insights into reform processes without sufficiently assessing their impact on employment outcomes (Akhuemonkhan et al., 2022; Okolie et al., 2023). This gap underscores a pressing need to empirically evaluate the efficacy of TVET reforms, particularly those that integrate digital skills and entrepreneurship, in post-pandemic Nigeria.

The main objective of this study is to investigate the efficacy of post-pandemic TVET reforms in addressing youth unemployment in Nigeria. Specifically, the study seeks to:

- assess the impact of digital skills integration within TVET programs on youth employability in Nigeria.
- evaluate the role of entrepreneurship training in enhancing job creation among youth TVET graduates.
- examine the effectiveness of public-private partnerships in strengthening TVET outcomes in terms of labour market relevance.

To achieve the above objectives, the following hypotheses were formulated:

- H₀₁: Integration of digital skills into TVET programs has no significant effect on youth employability in Nigeria.
- H₀₂: Entrepreneurship training in TVET has no significant impact on job creation among youth.
- H₀₃: Public-private partnerships do not significantly enhance the labour market relevance of TVET programs.

TVET is defined as the education and training that provides knowledge and skills for employment, encompassing formal, non-formal, and informal learning pathways (UNESCO, 2021). Digital Skills Integration refers to embedding ICT competencies and emerging technologies in curricula to prepare learners for the digital economy. Entrepreneurship Training involves equipping learners with the competencies to start and manage businesses, fostering self-employment. Public-Private Partnerships (PPPs) is referred to as cooperative arrangements between government agencies and private sector actors in the design, delivery, and assessment of TVET programs.

This study is anchored in the Human Capital Theory and the Systems Theory of Vocational Education. Human Capital Theory (Becker, 1964) posits that investment in education and skill development enhances worker productivity and employability. TVET reforms, especially those focused on digital and entrepreneurial skills, are thus conceptualized as investments with potential returns in employment outcomes. Systems Theory of Vocational Education (Billett, 2011) frames TVET as an interconnected system involving institutions, industries, learners, and policy



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environments. This theory underscores the importance of alignment between training content and labour market demands through partnerships and feedback mechanisms.

Several empirical studies have examined the role of TVET in promoting employment. For instance, Aina and Adeyemi (2022) found a positive relationship between digital skill acquisition and employment among Lagos-based youth TVET graduates. Similarly, Eze and Iwuanyanwu (2023) highlighted the potential of entrepreneurship modules within TVET to stimulate small-scale business creation. However, their findings noted a lack of sustained support systems, such as mentoring and seed funding, which limits long-term impact.

Recent scholarship links TVET reforms to employability and national productivity (African Union, 2020; Okolie et al., 2022). According to Adebayo et al. (2021), curriculum alignment with industry 4.0 standards significantly improve job matching. Studies by UNESCO (2022) and ILO (2023) highlight the potential of digital skills and PPPs in reducing youth joblessness. However, empirical evidence specific to Nigeria's post-COVID context remains limited

Moreover, studies such as Bello and Hassan (2022) emphasize the necessity of industry collaboration, showing that TVET institutions with strong private sector linkages produce more employable graduates. Nevertheless, research by Okafor et al. (2023) noted that implementation challenges—ranging from outdated infrastructure to undertrained instructors—persist across many institutions, compromising reform efficacy.

This study addresses a critical gap in existing scholarship by empirically evaluating the outcomes of post-COVID-19 TVET reforms in Nigeria. By focusing on digital skills, entrepreneurship training, and PPPs, the research aims to contribute to policy and practice by identifying what works, under what conditions, and for whom. The study's findings are expected to inform future reform directions and support sustainable strategies for

2. Materials and Methods

This study employed a quantitative research design to investigate the efficacy of post-pandemic Technical and Vocational Education and Training (TVET) reforms on youth unemployment in Ogun State, Nigeria. The target population comprised an infinite pool of youth aged 18–35, both male and female, including graduates and non-graduates who have participated in TVET programs or are eligible for such interventions across Ogun State's urban and semi-urban industrial clusters. A multistage sampling technique was adopted, beginning with stratified sampling to ensure representation across key demographic segments (gender, education status, and location), followed by purposive sampling of respondents who have either completed or are enrolled in digital skills or entrepreneurship-based TVET programs. Using Cochran's formula for infinite populations, a sample size of 384 respondents was determined at a 95% confidence level and 5% margin of error. Primary data were collected through structured questionnaires and supplemented by key informant interviews with policymakers, training providers, and industry partners. The instrument captured variables including digital skills acquisition, entrepreneurship training, extent of public-private partnership involvement, and employment status. Reliability was tested using Cronbach's alpha, with coefficients above 0.7 indicating internal consistency. Data were analyzed using descriptive statistics (mean, frequency, standard deviation) and inferential statistics including binary logistic regression and structural equation modeling (SEM) to determine the relationships between TVET reform variables and youth employment outcomes. The binary logistic regression model is specified as: $\log\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$, Where PP is the probability of a respondent being employed, X_1 represents digital skills acquisition, X_2 denotes entrepreneurship training, and



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X_3 captures the influence of public-private partnerships; β_0 is the constant, $\beta_1, \beta_2, \beta_3$ are the coefficients of predictors, and ϵ is the error term. This modelling framework enables the testing of the study's hypotheses on the significance and direction of relationships between TVET reform components and youth employability.

3. Results and Discussions

Table 1: Socio-Demographic Characteristics of Respondents (n = 384)

Variable	Category	Frequency	Percentage (%)
Gender	Male	210	54.7
	Female	174	45.3
Education Level	Graduate	214	55.7
	Non-Graduate	170	44.3
Age Range	18–24	128	33.3
	25–29	140	36.5
	30–35	116	30.2
Participation in TVET Program	Yes	275	71.6
	No	109	28.4
Employment Status	Employed (Self/Other)	203	52.9
	Unemployed	181	47.1

Source: Researchers' Output, (2026)

Table 2: Binary Logistic Regression Results on Employment Status

Predictor Variable	Coefficient (β)	Std. Error	Wald	Sig. value (p)	Exp(β) (Odds Ratio)
Constant	-1.732	0.432	16.1	0.000	-
Digital Skills (X_1)	0.984	0.251	15.4	0.000**	2.676
Entrepreneurship Training (X_2)	0.811	0.273	8.84	0.003**	2.250
Public-Private Partnership (X_3)	0.694	0.306	5.13	0.023*	2.002

Note: * $p < 0.05$, ** $p < 0.01$

Source: Researchers' Output, (2026)

The SEM analysis yielded the following standardized path coefficients:

-	DSI	→	YE:	β	=	0.68,	p	<	0.01
-	ET	→	YE:	β	=	0.57,	p	<	0.01
-	PPP	→	YE:	β	=	0.49,	p	<	0.05

These results indicate that all three exogenous variables have significant positive effects on youth employment outcomes. The model's goodness-of-fit was assessed using several indices: Comparative Fit Index (CFI): 0.94, Root Mean Square Error of Approximation (RMSEA): 0.05, Standardized Root Mean Square Residual (SRMR): 0.04. These values suggest an acceptable fit between the proposed model and the observed data.

The logistic regression analysis shows that all three independent variables; digital skills integration, entrepreneurship training, and public-private partnerships have a statistically significant positive impact on youth employment status in Ogun State. Specifically, respondents who acquired digital skills through TVET programs were 2.68 times more likely to be employed



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compared to those who did not. Entrepreneurship training also significantly improved employment odds by 2.25 times, indicating the value of self-employment potential. Moreover, involvement in public-private partnerships improved employability by 2.00 times, underscoring the importance of industry collaboration.

To comprehensively understand the interrelationships among the variables, SEM was employed. This method allows for the assessment of both direct and indirect effects among latent constructs. The model includes three exogenous latent variables:

Digital Skills Integration (DSI) representing the incorporation of digital competencies into TVET programs. Entrepreneurship Training (ET) denoting the provision of entrepreneurial skills within TVET curricula. Public-Private Partnerships (PPP): indicating collaborations between TVET institutions and industry stakeholders.

The endogenous latent variable is Youth Employment (YE) reflecting the employment status of TVET graduates. Each latent construct was measured using multiple observed indicators derived from survey items. Confirmatory Factor Analysis (CFA) was conducted to validate the measurement model, ensuring that the indicators reliably represent their respective constructs. The structural model posits that DSI, ET, and PPP directly influence YE. The following hypotheses were tested:

H₀₁: Digital Skills Integration positively affects Youth Employment.

H₀₂: Entrepreneurship Training positively affects Youth Employment.

H₀₃: Public-Private Partnerships positively affect Youth Employment.

The SEM analysis corroborates the initial findings from the logistic regression, reinforcing the significance of TVET reforms in enhancing youth employment in Ogun State, Nigeria. Digital Skills Integration: The strong positive effect underscores the critical role of digital competencies in the modern labor market. Entrepreneurship Training: The significant impact highlights the importance of fostering entrepreneurial mindsets among youth. Public-Private Partnerships: The positive influence indicates that collaborations enhance the relevance and quality of training. These findings are consistent with existing literature emphasizing the need for demand-driven, industry-aligned TVET programs to address youth unemployment effectively.

These findings confirm the study's hypotheses that digital skills, entrepreneurship training, and PPPs significantly enhance youth employability. The strong influence of digital skills aligns with Aina and Adeyemi (2022), who found that ICT proficiency substantially boosts job-readiness in Nigeria's urban clusters. Similarly, the importance of entrepreneurship corroborates Eze and Iwuanyanwu (2023), who noted that youth trained in business management were more likely to start microenterprises, although sustainability depended on post-training support. The role of PPPs echoes the findings of Bello and Hassan (2022), where partnerships led to curriculum modernization and internship opportunities that bridged the school-to-work transition.

However, unlike Okafor et al. (2023), who reported weak outcomes due to institutional bottlenecks, this study found that where reforms were properly implemented—especially in collaboration with industry—the employment impact was significantly higher. This suggests that context-specific factors, such as Ogun State's industrial clusters and donor-funded skill hubs, may have amplified reform effectiveness. This study examined the effectiveness of post-pandemic TVET reforms on youth unemployment in Ogun State. The results demonstrate that the integration of digital skills, entrepreneurship education, and public-private partnerships significantly improves employment outcomes for youth. The findings are consistent with both national and international



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studies that advocate reform-oriented, demand-driven vocational education systems. The study confirms the positive impact of targeted TVET interventions in a post-COVID-19 recovery context and underscores the need for sustained collaboration among government, industry, and training institutions to scale such impacts. These outcomes provide empirical validation for the strategic orientation of current TVET reforms and offer actionable insights for policymakers. Scaling up these reforms, institutionalizing industry-led curriculum updates, and providing support mechanisms for young entrepreneurs can deepen the employment impact of vocational education in Nigeria.

The SEM analysis provides robust empirical evidence supporting the efficacy of post-pandemic TVET reforms in improving youth employment outcomes in Nigeria. Integrating digital skills, entrepreneurship training, and fostering public-private partnerships are pivotal strategies for enhancing the employability of TVET graduates. Policymakers and stakeholders should prioritize these areas to sustain and scale the positive impacts observed

4. Conclusion and Recommendations

Conclusion

This study assessed the efficacy of post-COVID-19 Technical and Vocational Education and Training (TVET) reforms in addressing youth unemployment in Ogun State, Nigeria. The findings reveal that targeted reforms—particularly the integration of digital skills, entrepreneurship training, and strengthened public-private partnerships—significantly enhance the employability of youth. The logistic regression analysis showed that youth who acquired digital competencies and entrepreneurial capabilities through structured TVET programs were more likely to secure employment or start small enterprises. Furthermore, the involvement of industry stakeholders through public-private partnerships improved the market relevance and quality of training, facilitating smoother transitions from training to employment.

These results validate the hypothesis that properly designed and implemented TVET reforms are effective instruments for tackling youth unemployment in Nigeria. However, the study also highlights the need for sustained policy support, institutional alignment, and continuous adaptation to labour market trends to ensure long-term impact.

Recommendations

In light of the findings and the broader socio-economic realities of Nigeria, the following recommendations are proposed:

- Federal and state education ministries, in collaboration with the National Board for Technical Education (NBTE), should ensure the full integration of digital literacy, coding, and ICT tools into all TVET programs.
- Entrepreneurship should not only be a module but a practical pathway in TVET institutions.
- Government should provide incentives for companies that participate in apprenticeships and curriculum co-development.
- Targeted investments are needed to modernize facilities, retrain educators, and ensure that training environments simulate real-world work settings.
- A data-driven system should be implemented to track the employment outcomes of TVET graduates over time.
- Nationwide campaigns, community sensitization, and scholarship schemes should be used to promote TVET as a viable, respected, and lucrative career path.



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- TVET reforms must be protected from political instability and funding disruptions. Policies should be enshrined in long-term national development plans and supported through multi-stakeholder financing models.

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