Enhancing Gender Equity through Policy and Practice: Evidence from TVET Institutions in Nigeria

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Abstract: This study investigates the influence of gender policy implementation and institutional commitment to Technical and Vocational Education and Training (TVET) on gender inclusion and equity for women in Nigeria. Despite constitutional provisions and international frameworks advocating for gender equality, women remain underrepresented in technical education and leadership roles across the country. A survey research design was adopted, involving 240 academic and administrative staff from 18 public polytechnics across Nigeria's six geopolitical zones, selected through a multi-stage sampling technique. Data were collected using a structured Likert-scale questionnaire distributed via Google Forms and snowball sampling through professional platforms including ASUP, SANNIP, and NASU. Data interpretation was performed by the use of descriptive statistics and multiple regression analysis. The results indicate that promoting women in STEM ($b = 0.541$, $p < 0.05$) was the most influential in enhancing gender inclusion, including condemning bullying ($b = 0.326$), sponsoring women ($b = 0.315$), and encouraging women to take up management roles ($b = 0.249$). On the contrary, the mere employment by women ($b = 0.060$) was not a significant predictor of gender inclusion. The research establishes that gender policies when instituted with an institutional commitment could considerably improve the gender equity in TVET. It suggests organizational changes, such as more effective policy implementation, more women in leadership roles, specific sponsorship, and STEM programs. These measures will be essential towards reducing the gender disparities and ensuring women become a significant stakeholder in the socio-economic growth of Nigeria.

INTRODUCTION

Gender equality has remained an issue of topicality ever since there has been a huge focus on the same by global development organisations, national governments, and learning institutions alike. The theme has gained added impetus in recent years, especially in education and training in technical skills. Gender disparities in most areas, such as education and professional training, indicate structural inequalities that are impeding the development of the nations (UNESCO, 2022; UN Women, 2023).

Similar to other nations, Nigeria has made multiple efforts at reducing gender inequality, with the support of the global and local women movements (Olatunji & Adebayo, 2021). The National Policy on Women (NPW), which was based on international conventions such as CEDAW and the Beijing Platform of Action, aimed at ensuring that women expanded their socioeconomic participation. Nonetheless, gender inequality is also common, particularly in Technical and Vocational Education and Training (TVET) institutions. The Unsuccessful Gender and Equal Opportunities Bill proposal in 2016 is yet another evidence of the persistence of cultural, religious, and patriarchal obstacles (Aina and Oloruntoba, 2020).

TVET institutions are well placed to facilitate people with technical and practical skills that are applicable in employment and innovation. However, they tend to reproduce gender inequalities within society since female students and employees are exposed to poor access to STEM, ineffective institutional protection, and a lack of leadership representation (UNESCO-UNEVOC, 2022). Although there are national policies on gender-related issues, there is a dearth of evidence on how TVET institutions can implement these general frameworks into institution-level practices that positively influence women. In particular, there are still gaps in the knowledge of how the admission processes, funding system, anti-harassment systems, and the gendered governance systems are applied in Polytechnics in Nigeria.

Considering these gaps, this paper examines policy formulation and provision of gender policies in the institutions of TVET in Nigeria. It explores the contributions of institutional practices, including sponsorship of women students, programmes focused on STEM, anti-bullying and anti-harassment policy, employment equity, and leadership inclusion, to enhancing gender equity. The study aims to conduct a study in federal and state Polytechnics of six geopolitical zones of Nigeria to understand the extent to which gender-rendered policies in the TVET are in line with the interests of the whole nation with regard to inclusivity and women empowerment.

Even though education is brought up as a transformative instrument of gender equality, the literature on this area of study seldom examines the working realities in TVET institutions that either facilitate or delay the practicalization of gender policies (Ewoh-Odoyi, 2021). The current difficulties, including inadequate funding, ineffective monitoring, and incomplete

implementation, keep restricting the progress (Akinyemi and Adebayo, 2022). In the meantime, low enrolment rates in technical programmes, low dropout rates, and peripheral involvement in TVET leadership are still a reality among women (Adelakun et al., 2015; Udeani and Ejikeme, 2011).

The gender-responsive TVET policy must not simply be a token gesture but must be backed with regular instructions, definitive plans of implementation, and institutional devotion. Inclusive TVET increases productivity, economic, and poverty alleviation in women (Tripney and Hombrados, 2013; Anaele et al., 2014), but also defies the patriarchal norms that restrain progress in women (Napikoski, 2014). This study addresses a significant gap in the literature by concentrating on the institutional-level policy implementation instead of national-level models on the operationalization of gender equality in the Nigerian TVET sector.

The empowerment of gender policy enactment in the Nigerian TVET institutions is thus critical to sustainable human capital development. An equitable access, flexible programmes, and women in leadership in TVET through a national plan will make the society more inclusive, productive, and equitable.

THEORETICAL FRAMEWORK

Four theoretical frameworks exist that support the present study and that are, in their turn: gender mainstreaming theory, feminist theory, capability approach, and institutional theory, which have given rise to a multidimensional perspective with the help of which the gender equity in the Nigerian TVET institutions can be analyzed. The Gender mainstreaming theory aims at institutionalization of gender considerations in policy development and how institutions are run in a manner that promotes equity and sustainability (UN Women, 2015). Liberal and intersectional strands of feminism theory propose the elimination of formal and informal procedures to participation by women and the acknowledgement of how intersecting identities (gender, class, and ethnicity) influence marginalization experience (Crenshaw, 1991; hooks, 2000). A capability approach, elaborated on by Sen (1999) and extended by Nussbaum (2000), is about the expansion of real freedoms and opportunities of people to live valuable lives, meaning that policies beyond access need to be implemented to guarantee meaningful engagement. Finally, the institutional theory presents an understanding of how the norms, structures, and practices in organizations perpetuate or question inequality (DiMaggio & Powell, 1983). The overall focus of these frameworks is on the analysis of how gender equity is effectively promoted by the policies and practices of integrated reforms in specific contexts of the TVET sector.

METHODOLOGY

This study adopted a survey research design, appropriate for collecting data from a large, geographically dispersed population and for obtaining descriptive and inferential insights into gender policy and commitment in Technical and Vocational Education and Training (TVET) institutions in Nigeria.

Population and Sampling

The study population was composed of academic and administrative workers within the Nigerian government polytechnics. In order to have representativeness and national coverage, a multi-stage sampling technique was employed. Nigeria was divided into the geopolitical regions, that is. North-Central, North-East, North-West, South-East, South-South, and South-West regions. The three polytechnics in each zone were randomly chosen; thus, the study had a total of 18 polytechnics that took part in the study. In the chosen polytechnics, snowball sampling was applicable to identify the respondents. The methodology was highly efficient due to the institution-based bureaucracies and the online survey. Key contact people in Women in Technical Education and Development (WITED) networks of each institution assisted in the dissemination of the survey link using the WhatsApp accounts of professional associations like the Academic Staff Union of Polytechnics (ASUP), Senior Staff Association of Nigerian Polytechnics (SSANIP), and Non-Academic Staff Union (NASU).

Instrument Design and Validation

Information was gathered with reference to a structured four-point Likert-scale survey; the questionnaire was aimed at measuring perceptions and experiences of gender policy adherence and commitment in TVET institutions. Component Factor Analysis (CFA) was utilized in determining the Content and Construct validity of the instrument. In order to have an internal consistency and reliability, Cronbach's alpha coefficient was computed, and this came up at 0.82, which shows a high level of reliability (Nunnally & Bernstein, 1994).

Data Collection and Analysis

The questionnaire was administered online via Google Forms over two weeks. The responses were automatically gathered and coded to be analyzed. The data were summarized by means of descriptive statistics (mean and standard deviation). Correlation among the variables were conducted by Pearson Product-Moment Correlation and Multiple Regression Analysis was used to test the hypothesis at 5% significance level. The SPSS Version 29 (2022) was applied to analyze the data. The methodology guaranteed a thorough data coverage, rigor of the methods, and plausible inference on the condition of the gender policy and inclusion within the public polytechnic system in Nigeria.

RESULTS AND DISCUSSION

Results

The research evaluates the presence of the best practices of gender inclusion and equality in institutions. In the two weeks of data collection by use of the online survey, 240 responses were received and felt to be fitting and sufficient to be analyzed. Fig. 1 indicates the response rate of every selected 18 Polytechnics.

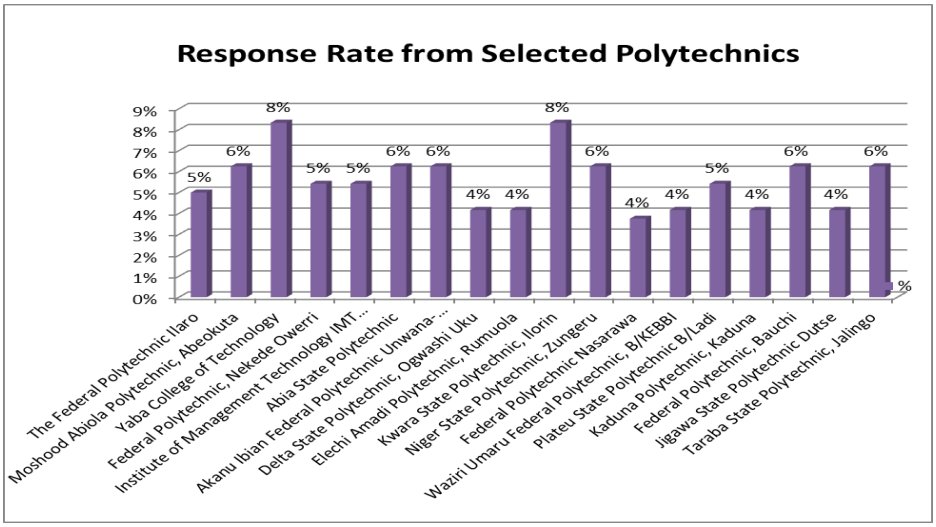

Fig. 1: Response Rate from Each of the Selected Polytechnics

The Cronbach alpha value for the questionnaire was found to be above 70%. The outcome of the study analysis is revealed in Tables 1- 4.

Table 1: Correlations

	GIE		WS	ESTEM	COB	IWE	PWMP
Pearson Correlation	GIE	1.000	.129	.387	.334	.031	.201
	WS	.129	1.000	.583	.588	.381	-.165
	ESTEM	.387	.583	1.000	.307	.288	-.216
	COB	.334	.588	.307	1.000	-.024	.100
	IWE	.031	.381	.288	-.024	1.000	.254
	PWMP	.201	-.165	-.216	.100	.254	1.000
Sig. (2-tailed)	GIE	.	.023	.000	.000	.315	.001
	WS	.023	.	.000	.000	.000	.005
	ESTEM	.000	.000	.	.000	.000	.000
	COB	.000	.000	.000	.	.355	.062
	IWE	.315	.000	.000	.355	.	.000
	PWMP	.001	.005	.000	.062	.000	.

Abbreviations and meaning: GIE ▫ Gender Inclusion and Equity; WS ▫ Women Sponsorship; ESTEM ▫ Encouragement in STEM; COB ▫ Condemnation of Bullying; IWE ▫ Increase in

Women's Employment; PWMP ▫ Promotion of Women in Management Positions

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.571a	.326	.311	1.237

a. Predictors: (Constant), Promotion of women in management positions, Condemnation of bullying, Increase in women's employment, Encouragement in STEM, Women's sponsorship

Table 3: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	173.146	5	34.629	22.623	.000b
	Residual	358.187	234	1.531		
	Total	531.333	239			

a. Dependent Variable: Gender Inclusion and Equity

b. Predictors: (Constant), Promotion of Women in Management Positions, Condemnation of Bullying, Increase in Women's Employment, Encouragement in STEM, Women's Sponsorship

Table 4: Coefficients

Unstandardized Coefficients Model B		Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	-.146	.535	-.273	.785
	Women Sponsorship	.547	.160	.315	-3.425	.001
	Encouragement in STEM	.995	.125	.541	7.990	.000
	Condemnation of Bullying	.351	.083	.326	4.226	.000
	Increase in Women's Employment	.083	.098	.060	-.850	.396
	Promotion of Women in Management Positions	.393	.103	.249	3.835	.000

Dependent Variable: Gender Inclusion and Equity.

DISCUSSION

The results from this study provide essential information regarding the condition of gender inclusion and equity in Nigeria's Technical and Vocational Education and Training (TVET) institutions. Using the answers provided by 240 academic and administrative employees in 18 polytechnics, the data indicate institutional practices that have a big impact on the results of gender equity. The validity of the research instrument (Cronbach's alpha is more than 0.70)

and the extensive geographical distribution of the respondents give a sound foundation through which the results can be interpreted.

The Significant Gender Inclusion Predictors. According to Table 1, there is a positive, yet statistically significant relationship between gender inclusion and equity (GIE) and four fundamental variables, including women sponsorship (WS), encouragement in STEM (ESTEM), condemnation of bullying (COB), and promotion of women to management roles (PWMP). These results confirm previous studies by Ngugi and Muthima (2017) and Adelakun, Oviawe, and Barfa (2015), who cited systemic social and institutional constraints like a small support system, gender-related stereotypes, and the absence of female leadership as major contributors to the unequal participation in technical education and governance.

Additional evidence is given by Table 2, which indicates that these predictors jointly account for 32.6% of the variance of gender inclusion results ($R2 = 0.326$). This supports the fact that a multi-dimensional, institutional response to gender inequalities is needed, which is consistent with UNESCO (2022) recommending a comprehensive strategy that exceeds enrollment goals but encompasses systemic changes in STEM and vocational routes.

These lessons are further supported in Table 4, which indicates that the regression constant is negative, suggesting a lack of gender inclusion in the absence of proactive institutional interventions. The most significant predictors of gender inclusion were Encouragement in STEM ($\beta = 0.541$, $p < 0.001$), Condemnation of bullying ($\beta = 0.326$, $p < 0.001$), Women's sponsorship ($\beta = 0.315$, $p = 0.001$), and Promotion to management positions ($\beta = 0.249$, $p < 0.001$).

These results are similar to those of Chikunda (2022) who believed that gender equity in technical industries is most effective with active support systems, inclusive policies, and removal of unfriendly environments that marginalize women. Surprisingly, the statistically insignificant effect ($b = 0.060$, $p = 0.396$) was observed in the case of increased women employment (IWE), meaning that numerical representation is not enough to obtain the real equity. This is in line with Katselidis (2023), who pointed out that to be actually equitable, employment should be paired with good pay, leadership opportunities, and non-discrimination in the workplace.

Policy and Practice Implications. The results of this paper disapprove the null hypothesis and substantiate that good implementation of gender policy with the help of institutional commitment is a significant boost in gender inclusion in the Nigerian TVET institutions. This confirms the claim that without practice there should be no policies and that enforceable and measurable policies are necessary to bridge gender gaps.

Additionally, the results reinforce the importance of certain investment in girl-focused STEM programs, institutional adoption of anti-bullying legislation, and intentional placement of women in the managerial roles. The strategies

directly correspond to the objectives of Sustainable Development Goal 5 (SDG 5) which aims to achieve gender equality and empower all women and girls. (UN Women, 2023).

The implications are clear. Policy must be action and not rhetoric. The concepts of gender equity must be imbued within the structure of the work of Nigerian Polytechniques and TVET institutions. They include the creation of safe and inclusive learning environments, mentoring and sponsoring women, particularly in programs related to STEM, transparent and fair career paths, and frequent reviews of the effects of gender policies on an institutional level. These objectives will not only help in providing fair learning settings, but they will also make women the important agents of socioeconomic change in Nigeria.

The paper confirms that gender equity within the Nigerian TVET system requires more than policy statements as it requires institutional support, cultural change, and deliberateness on different levels. Increasing the number of women in STEM, making STEM spaces safe, and developing leadership pipelines can be seen as not only best practices but the foundation of making TVET institutions the place of true inclusiveness.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This paper empirically shows that gender sensitive policies implementation as well as historical institutional commitment to Technical and Vocational Education and Training (TVET) among women have a significant and positive influence on the achievement of gender inclusion and equity in Nigeria. In particular, female sponsorship, female education in STEM, denunciation of bullying and harassment, and promotion of women to hold leadership positions have occurred to be ranked as the most important factors that influence the provisions of equity in TVET Institutions. The results support the argument that token employment or make-over representation is not sufficient to end the existing disparities between men and women. Effective inclusion, therefore, must be intentional, strategic, and based on structural reform that will focus on access, equity, empowerment, and protection of women and girls. These results resonate with a set of policy discussions that classify TVET as an effective driver of inclusive economic growth, poverty reduction, and gender equality, especially when institutional activities follow the principles of inclusiveness and policies are enforceable (UNESCO, 2022; UN Women, 2023). Furthermore, the fact that a rise in employment by itself has had no significant impact on gender equity means that more should be done than just increasing the numerical representation of women in both education and the employment environment. The study contributes to existing literature by identifying encouragement in STEM education and institutional accountability in combating gender-based discrimination as the most significant levers for change.

Recommendations

To ensure the sustainability of gender inclusion in Technical and Vocational Education and Training (TVET) in Nigeria, all areas of institutional governance, including admission, curriculum, pedagogy, personnel recruitment, and elevation of leadership, should have in place gender-sensitive policies. Such policies have to be measurable, frequently revised, and appropriately enforced. There is also the recommendation that the industry players must do more in terms of sponsoring and mentoring women, particularly in the field of STEM, where women remain under-represented in. Efforts to push women to the level of leadership should also be introduced in that order: gender quotas, leadership development initiatives, and including women into the succession plan. A zero-tolerance approach, a confidential reporting process, and timely disciplinary measures should be used to deal with bullying, harassment, and discrimination.

Increased access and retention of more women and girls in TVET is required. This would be through review of admissions policies that remove gender barriers, childcare services, and gender sensitive counseling and career advice. To build an inclusive educational ecosystem, a strategy incorporating the entire range of stakeholders, i.e., the federal government, state governments, NGOs, professional associations, and organizations, e.g., ASUP, NASU, SANNIP, and international partners, will be needed. This will require donating additional funds, alignment of policies, and establishment of data credentials to monitor the impact of gender. Gender-sensitivity should also be extended to curriculum and modes of instruction, where stereotypes are eradicated to empower girls as learners. Teachers should be provided with non-discriminatory teaching methods that will instill confidence and competence in the girls. The government has the final say and also cultural change, political goodwill, and unrelenting advocacy, which will see to it that gender equality is achieved in the TVET sector. Maintaining the structural barriers that the research identified in this study may help to lessen the gender gap in technical education; it may also enable the nation to accomplish its larger goals of equity, innovation, and economic development.

Conflict of Interest

The authors of this paper declare that there is no conflict of interest.

Ethical Approval Statement

This study did not involve human participants, personal data, identifiable information, animals, or any procedures requiring ethical oversight. All data used was obtained from publicly available sources and did not contain any confidential or sensitive information.

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