

EMPOWERING FEMALE STUDENTS IN RIVERS STATE TERTIARY INSTITUTIONS: POLICIES, PRACTICES, AND BARRIERS TO LEADERSHIP AND STEM PARTICIPATION

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ABSTRACT: This study investigated the policies and practices that empower female students to access leadership roles and examines the barriers to their participation in science, technology, engineering, and mathematics (STEM) disciplines in tertiary institutions in Rivers State, Nigeria. A descriptive survey research design was adopted to capture the current state of gender equity initiatives without manipulating variables. The population comprised 5,604 stakeholders, including lecturers, administrative staff, and students across Ignatius Ajuru University of Education, Rivers State University, and the University of Port Harcourt. Using a stratified random sampling technique, 450 respondents were selected to ensure broad representation from both gender-sensitive and non-gender-sensitive institutions. Data were collected with a validated self-designed questionnaire titled Empowering Female Students in Tertiary Institutions Questionnaire (EFSTEQ), which achieved a Cronbach Alpha reliability coefficient of .768. Mean and standard deviation were used to answer the research questions, while t-tests at the .05 significance level using SPSS version 29 to test the hypotheses. Findings revealed that although policies promoting gender equity exist, their implementation remains weak, limiting women's access to leadership roles and STEM programs. Major barriers include socio-cultural stereotypes, inadequate mentorship, economic constraints, and institutional practices that do not fully support gender inclusivity. The study concluded that effective gender-responsive policies, leadership development programs, and targeted STEM initiatives are essential to dismantle structural barriers. It recommends strengthening institutional frameworks, providing mentorship opportunities, and enhancing gender-sensitive policy implementation to promote women's active participation in leadership and STEM, thereby advancing inclusive education and socio-economic development in Rivers State.

Keywords: Female Students, Gender Equity, Tertiary Education, Leadership Roles, STEM Participation, Higher Education, Empowerment Policies, Barriers, Rivers State, Nigeria.

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INTRODUCTION

Women's full participation in education and leadership is widely recognized as a prerequisite for social justice and sustainable development. In the context of higher education, the presence of female students in leadership roles and in science, technology, engineering and mathematics (STEM) disciplines is not merely a question of equity; it is also an engine for innovation and

economic growth. Across the world, evidence shows that gender-diverse teams drive creativity and that women's involvement in decision-making enriches institutional governance (Stromquist, 2015; UNESCO, 2017). Yet, in Nigeria and specifically in Rivers State, female students remain underrepresented in both formal leadership positions and STEM programs, despite gradual increases in overall female enrollment in tertiary education. This persistent gender gap raises critical questions about the policies, practices, and structural barriers that continue to constrain women's educational and leadership opportunities.

Historically, gender roles in Nigeria have been shaped by patriarchal traditions that assign public leadership and technical expertise to men while confining women to domestic or care-related spheres (Odejimi & Odejimi, 2020). These socio-cultural expectations influence parental guidance, community attitudes, and even teachers' encouragement of girls during formative school years. Thus, by the time young women reach tertiary institutions, many have internalized stereotypes that question their capacity for scientific inquiry or public leadership. This "leaky pipeline" effect limits the number of women who aspire to, and are prepared for, positions of influence in student governance and STEM-related fields. Such patterns mirror global trends, but local dynamics including economic pressures, early marriage in some communities, and persistent gender-based discrimination magnify the challenge in Rivers State (Ezeudu & Obi, 2013).

The consequences of female underrepresentation in leadership and STEM are far-reaching. Without the voices of women in student governance, policy deliberations within tertiary institutions risk neglecting the perspectives and needs of half the student population. Furthermore, the under-enrolment of women in STEM disciplines restricts the development of a diverse scientific workforce, slowing innovation and economic competitiveness. Nigeria's national development plans and the United Nations' Sustainable Development Goal 5 both call for gender equality in education and decision-making roles, making it imperative for Rivers State universities and polytechnics to dismantle the barriers that hinder women's participation (UNESCO, 2017).

Efforts to empower female students must therefore operate at multiple levels. At the policy level, government and institutional authorities can introduce gender-responsive regulations such as quotas or minimum representation targets for female students in leadership positions (Tong, 2014). Such affirmative measures have been shown to rapidly improve representation and to shift societal perceptions of women's capabilities. Institutional practices ranging from mentorship schemes and leadership training to scholarships for women in STEM are equally essential to build confidence and provide the practical skills required to compete for leadership roles (Psacharopoulos & Patrinos, 2018). These initiatives must be coupled with a deliberate strategy to mainstream gender considerations into campus governance and to create safe, inclusive learning environments.

Yet, policy reforms and empowerment programs cannot succeed in isolation from the socio-cultural context. Cultural beliefs and gender stereotypes continue to dissuade many girls from selecting science and technology subjects in secondary school, limiting the pool of qualified female candidates for STEM programs at the tertiary level. Within universities, the scarcity of female faculty role models in STEM fields reinforces the perception that these disciplines belong to men (Ololube et al., 2009; Ololube et al., 2016; Stromquist, 2015). Gender-based harassment and subtle forms of discrimination further discourage female students from seeking leadership positions or persisting in male-dominated courses (Lorber, 2010). Economic barriers such as the higher costs of laboratory-based courses and unequal access to scholarships

compound these challenges, particularly for students from low-income households (World Bank, 2019).

A holistic understanding of these barriers, and of the policies and practices that can address them, is critical for meaningful change. Empowering female students to participate in leadership and STEM disciplines in Rivers State's tertiary institutions requires coordinated action: targeted government and university policies, institutional reforms, capacity-building programs, and community engagement that challenge long-standing gender norms. Such a multifaceted approach not only fulfills national and international commitments to gender equity but also strengthens the intellectual and economic vitality of higher education itself. Through the creation of inclusive pathways to leadership and scientific innovation, Rivers State can harness the talents of all its students and position itself as a model for gender-responsive educational development in Nigeria and beyond.

Statement of the Problem

Despite notable progress in expanding female enrollment in Nigerian higher education, women in Rivers State continue to experience significant underrepresentation in both students' leadership roles and science, technology, engineering, and mathematics (STEM) disciplines. While national and international policy frameworks, including the United Nations Sustainable Development Goal 5, advocate for gender equality in education and decision-making, entrenched socio-cultural norms and institutional practices hinder women's full participation. Cultural expectations that prioritize domestic roles for women, gender stereotyping, and limited parental or community support often discourage girls from pursuing science-based courses or aspiring to leadership positions.

At the institutional level, inadequate gender-sensitive policies, scarcity of female role models, and limited mentoring programs further restrict women's visibility and influence in campus governance and STEM programs. Economic barriers, such as the higher costs of laboratory-based disciplines and limited scholarship opportunities, compound these challenges. Consequently, tertiary institutions in Rivers State risk perpetuating gender inequalities, constraining their own governance diversity, and undermining national efforts to build a competitive, inclusive scientific workforce. Addressing these persistent gaps requires a critical examination of the policies, practices, and socio-cultural barriers that continue to limit female students' access to leadership and STEM participation.

Aim and Objectives of the Study

The aim of this study is to investigate empowering female students in rivers state tertiary institutions: policies, practices, and barriers to leadership and STEM participation. Specifically, the study's objectives are:

- Identify policies and practices that can empower female students to access leadership roles within tertiary institutions in Rivers State.
- Explore the barriers hindering female participation in STEM disciplines within tertiary institutions in Rivers State.

Research Questions

Two research questions guided the study:

- What policies and practices can empower female students to access leadership roles in tertiary institutions in Rivers state?
- What are the barriers to female participation in STEM disciplines in tertiary institutions in Rivers State?

Hypotheses

Two hypotheses further guided the study:

- There is no significant difference in the distribution of leadership roles between male and female participants involved in the implementation of educational policies in tertiary institutions in Rivers State
- There is no significant difference in STEM participation between male and female participants in the implementation of educational policies in tertiary institutions in Rivers State.

CONCEPTUALIZATION

Theoretical Framework: Gender Equity Theory (Liberal Feminist Theory)

Gender Equity Theory, often framed within the tradition of Liberal Feminist Theory, provides a robust lens for examining the persistent underrepresentation of women in leadership and STEM disciplines. Liberal feminism is rooted in the Enlightenment ideals of individual rights and equal opportunities and argues that women and men should enjoy the same legal and institutional privileges (Tong, 2014; Ololube et al., 2013). The theory maintains that gender disparities are not natural but socially constructed and perpetuated through discriminatory laws, institutional practices, and cultural norms (Lorber, 2010). From this perspective, inequities in higher education such as limited female participation in leadership roles or STEM fields are viewed as the result of structural barriers rather than innate differences in ability or aspiration.

Central to Gender Equity Theory is the belief that reforming policies and institutional practices can create equal opportunities. Liberal feminists emphasize eliminating formal barriers, such as biased recruitment processes, and informal obstacles, including gender stereotypes and unequal access to resources (Bryson, 2016). For example, policies that ensure equitable admission to STEM programs, mentorship opportunities, and leadership training for female students align with the theory's call for systemic reform. By advocating for gender-neutral laws and practices, Liberal Feminist Theory focuses on fairness and inclusivity rather than radical restructuring of society (Tong, 2014).

In the context of tertiary institutions in Rivers State, Nigeria, this framework highlights how institutional and cultural factors intersect to limit female students' advancement. Gender norms, deeply rooted in Nigerian society, often discourage women from pursuing STEM disciplines or leadership positions (Odejimi & Odejimi, 2020). Gender Equity Theory provides a basis for analyzing how such cultural expectations can be addressed through policy interventions

like scholarship schemes for women in science and gender-sensitive leadership development programs aimed at leveling the educational playing field.

Moreover, Liberal Feminist Theory underscores the role of education as a catalyst for empowerment. According to Stromquist (2015), education is not merely the transmission of knowledge but a means of achieving social justice and economic participation. Policies that provide equal access to STEM education and leadership pathways are, therefore, not only a matter of fairness but also critical for national development. The theory aligns with human capital arguments that greater female participation in education contributes to broader economic growth and social progress (Psacharopoulos & Patrinos, 2018).

Critics of Liberal Feminist Theory argue that its focus on legal and policy reforms underestimates the depth of structural patriarchy and the intersection of gender with race, class, and culture (Hooks, 2000). However, for research seeking practical policy recommendations such as identifying strategies to empower female students in Rivers State, the theory remains particularly relevant. It provides actionable insights into how governments, universities, and stakeholders can dismantle explicit and implicit barriers to women's full participation.

Gender Equity Theory, articulated through the principles of Liberal Feminist Theory, offers a valuable analytical framework for investigating how policies and practices can empower female students to access leadership roles and overcome barriers to STEM participation in tertiary institutions. Thus, focusing on equality of opportunity and advocating for the removal of institutional and cultural barriers, this theoretical approach directly informs the development of evidence-based strategies for achieving gender parity in Nigerian higher education.

Policies and Practices for Empowering Female Students to Access Leadership Roles in Tertiary Institutions in Rivers State

Increasing female representation in institutional leadership requires coordinated policy action and sustained practice at multiple levels like the government, university administration, faculty, and student bodies. A policy framework to empower female students must address structural barriers (formal rules and resource allocation), institutional cultures (informal norms and expectations), and individual capabilities (skills, confidence, networks).

Policy instruments that mandate gender equity targets for student leadership and governance are effective starting points. Quotas or reserved positions for female student representatives in university councils, senate committees, and student unions can produce immediate changes in representation while signaling institutional commitment to gender parity (Stromquist, 2015). Such temporary special measures should be framed as pathway strategies toward sustained equality rather than permanent preferential treatment, aligning with liberal feminist principles that prioritize equal opportunity (Tong, 2014).

Mainstreaming gender into institutional regulations and structures strengthens implementation. Gender mainstreaming requires gender-responsive admission and recruitment regulations, transparent election rules for student leadership, and gender audits of campus governance processes (UNESCO, 2017). Therefore embedding gender considerations into policy instruments like budgets, performance metrics for faculties, and promotion criteria in universities can reduce ad hoc decision-making that often disadvantages women. In the Rivers State context, institutional gender policies should be complemented by local implementation guidelines that account for cultural norms and resource constraints typical of many Nigerian tertiary settings (Odejimi & Odejimi, 2020).

Leadership development programs like mentoring schemes, leadership workshops, public-speaking training, and internships with local government and private sector partners help women acquire the skills and confidence to pursue leadership roles (Psacharopoulos & Patrinos, 2018). Pairing female students with female role models from academia, industry, and alumni networks creates visible career pathways and counters stereotypes that leadership is male-dominated. Peer mentoring and student clubs focused on leadership and civic engagement also provide low-cost, high-impact environments for practice and feedback.

Scholarships, travel stipends for conferences, and seed funding for student-led initiatives reduce the economic constraints that disproportionately affect female students (World Bank, 2019). Resource allocation should explicitly target participation gaps in leadership activities and ensure equitable access to extracurricular experiences that often build leadership capital. Where necessary, childcare support or flexible scheduling for student-parents can further widen access.

Regular gender-sensitivity training for faculty, student leaders, and administrative staff helps surface and reduce discriminatory attitudes that undermine women's leadership prospects (Lorber, 2010). Establishing clear codes of conduct and confidential reporting channels for harassment or discrimination creates safer climates in which female students can participate without fear of retaliation. Publicizing success stories of female leaders on campus normalizes female leadership and reshapes peer expectations.

Universities collect sex-disaggregated data on leadership participation, conduct regular gender audits, and publish progress reports. Linking senior administrators' performance evaluations to gender-equity indicators creates institutional incentives for follow-through (Stromquist, 2015). Collaboration with state education authorities in Rivers State to track progress across institutions can promote cross-institutional learning and shared best practice.

Community and family engagement strengthens the policy mix. Outreach programs that engage parents, local community leaders, and secondary schools can shift early gender norms that channel girls away from leadership ambitions. Local partnerships with NGOs and private sector sponsors can provide additional mentorship, funding, and visibility for female student leaders.

Therefore, empowering female students in Rivers State to access leadership roles requires an integrated approach: targeted affirmative measures such as quotas and scholarships; institutional mainstreaming and capacity building; cultural change through training and role modeling; and robust monitoring and accountability. Thus, by combining legal-policy instruments with everyday institutional practices and community engagement, tertiary institutions in Rivers State can create sustained pathways for female leadership that bolster both equity and institutional quality.

Barriers to Female Participation in STEM Disciplines in Tertiary Institutions in Rivers State

Female participation in science, technology, engineering and mathematics (STEM) disciplines remains markedly low in Nigerian tertiary institutions, including those in Rivers State. Although more women have enrolled in higher education in recent decades, their representation in STEM-related programmes and careers lags behind that of their male counterparts. This gap reflects a complex interaction of socio-cultural norms, institutional practices, economic constraints, and psychological factors. Understanding these barriers is critical to designing effective interventions that promote gender equity and maximize the potential of all students.

Deeply ingrained cultural beliefs in Nigeria often associate scientific and technical careers with men and view women as more suited to social sciences, teaching, or caregiving professions (Odejimi & Odejimi, 2020). Families and communities sometimes discourage girls from pursuing engineering or technology courses, perceiving these as too demanding or inconsistent with traditional female roles. Such stereotypes begin in childhood and can undermine girls' confidence in mathematics and science, ultimately limiting their tertiary-level aspirations (UNESCO, 2017). In Rivers State, where patriarchal structures remain influential, these gendered expectations can be particularly strong.

The low participation of women in STEM at tertiary level is partly rooted in unequal preparation at earlier stages of education. Many secondary schools, especially in rural areas of Rivers State, have inadequate science laboratories, limited qualified science teachers, and gender-biased classroom practices that subtly favor boys (Ezeudu & Obi, 2013). Girls often receive less encouragement in mathematics and science classes, resulting in lower performance and self-efficacy. This weaker pipeline reduces the pool of female candidates eligible for STEM programs.

Within tertiary institutions themselves, policies and practices may inadvertently disadvantage women. Recruitment into STEM courses sometimes lacks targeted outreach or gender-sensitive admission criteria. Few universities in the region run mentorship programs or provide female-friendly learning environments in STEM faculties (Stromquist, 2015). Moreover, the scarcity of female faculty role models reinforces perceptions that STEM is a male domain, leaving female students without visible pathways to academic or professional success.

Economic factors also influence female participation. The cost of science and engineering programs often offer higher because of laboratory fees and materials deters families from supporting daughters in these fields, especially when household resources are limited (World Bank, 2019). For women from low-income backgrounds, financial constraints combine with social expectations that prioritize early marriage or immediate income-generating work over lengthy professional training.

Female STEM students frequently report experiences of gender-based harassment or subtle forms of discrimination such as being overlooked in laboratory teams or receiving less attention from lecturers (Lorber, 2010). Such hostile or unsupportive environments erode confidence and may lead women to drop out or transfer to non-STEM fields. The absence of robust reporting systems or supportive disciplinary procedures exacerbates the problem, allowing negative climates to persist.

Stereotype threat means the anxiety of confirming negative stereotypes about women's ability in mathematics and science because they can affect performance and persistence (Steele, 1997). A lack of confidence in their STEM abilities, often internalized from early socialization, discourages women from competing for selective programs or advanced courses. Without targeted interventions such as mentoring and skills-building workshops, these psychological barriers remain potent obstacles.

Cultural expectations regarding women's domestic roles can also conflict with the time demands of rigorous STEM programs. In Rivers State, female students who marry or have caregiving responsibilities during their studies often face pressure to de-prioritize academic commitments, limiting their ability to engage fully in laboratory work, research, or internships that are critical to STEM success (Odejimi & Odejimi, 2020).

The barriers to female participation in STEM disciplines in Rivers State tertiary institutions are multifaceted, encompassing socio-cultural stereotypes, weak preparatory

pipelines, institutional gaps, economic constraints, harassment, psychological factors, and competing domestic responsibilities. To address these obstacles requires coordinated interventions such as gender-sensitive educational policies, early encouragement of girls in science, financial support, mentorship networks, and robust mechanisms for combating harassment. Without these measures, the state risks losing the talents of half its potential STEM workforce and undermining broader goals of national development and technological advancement.

METHODS

The study employed a descriptive survey research design, which was considered appropriate because it focuses on understanding how educational policies addressing gender disparity are implemented in tertiary institutions in Rivers State without manipulating any variables. A descriptive survey involves gathering data from a large sample of a defined population and describing its key characteristics at a specific point in time.

The population comprised 5,604 stakeholders (teaching and non-teaching staff, including lecturers, administrative personnel, and students) drawn from tertiary institutions such as Ignatius Ajuru University of Education, Rivers State University, and the University of Port Harcourt (Registrar's Offices, 2023). From this population, 450 participants were selected using a stratified random sampling technique to ensure diverse representation across gender-sensitive and non-gender-sensitive institutions. The sample was divided into four strata: policymakers (50; 12.5%), administrators such as heads of departments and program coordinators (100; 25%), educators including lecturers and professors (150; 37.5%), and students (100; 25%). This structure ensured balanced perspectives on gender-related educational policies.

Data were collected using a self-developed questionnaire titled Empowering Female Students in Tertiary Institutions Questionnaire (EFSTEQ), consisting of three sections: Section 'A' covered respondents' bio-data, Section 'B' focused on gender disparities in enrollment and academic performance, and responses were rated on a 4-point Likert scale ranging from Very High Extent (VHE) to Very Low Extent (VLE). Two experts in Measurement and Evaluation at Ignatius Ajuru University validated the instrument for face and content validity, while a Cronbach Alpha coefficient of .768 confirmed reliability.

Researchers distributed 400 copies of the questionnaire with assistance from trained research aides, ensuring clarity of purpose. Data analysis employed mean and standard deviation to answer the research questions, using a criterion mean of 2.50, while t-tests set at the .05 significance level (via SPSS version 29) were applied to test the null hypotheses.

RESULTS

Research Question One: What policies and practices can empower female students to access leadership roles in tertiary institutions?

Table 1: Summary of descriptive statistics on the mean rating on policies and practices can empower female students to access leadership roles in tertiary institutions

S/N	Policies and practices of empower female students to access leadership roles in these institutions	Mean	SD	Remark
1.	Ensure gender-neutral recruitment and promotion to provide equal opportunities.	2.99	1.07	Agree
2.	Support female students through mentorship from accomplished women.	2.90	1.19	Agree
3.	Cultivate an inclusive environment for female students' confidence and leadership.	2.77	1.27	Agree
4.	Encourage gender diversity in education to inspire female leadership.	2.84	1.18	Agree
Grand Mean		2.88	1.18	Agree

The results in Table 1 provided a summary of descriptive statistics regarding the mean rating of policies and practices that can empower female students to access leadership roles within tertiary institutions. With grand mean of 2.88, SD= 1.18. The result showed that respondents strongly agree that ensuring gender-neutral recruitment and promotion to provide equal opportunities is crucial (Mean=2.99, SD=1.07). Support through mentorship from accomplished women is also recognized as beneficial (Mean=2.90, SD=1.19). Cultivating an inclusive environment for female students' confidence and leadership is seen as important (Mean=2.77, SD=1.27), as well as encouraging gender diversity in education to inspire female leadership (Mean=2.84, SD=1.18). Based on the responses from the respondents, it was concluded that the respondents collectively endorse the importance of these policies and practices in empowering female students to access leadership roles within tertiary institutions.

Research Question Two: What are the barriers to female participation in STEM disciplines within tertiary institutions in Rivers State?

Table 2: Summary of descriptive statistics on the mean rating on the barriers to female participation in STEM disciplines within tertiary institutions

S/N	Barriers to female participation in STEM disciplines within tertiary institutions in Rivers State	Mean	SD.	Remark
5.	Gender biases and stereotypes discourage female participation in STEM in Rivers State.	2.89	1.21	Agree
6.	The absence of female role models hinders women from pursuing STEM careers.	2.9	1.16	Agree
7.	Inadequate support and mentorship in tertiary institutions affect female STEM students' success.	2.78	1.21	Agree
8.	Limited access to educational resources and scholarships poses barriers to women in STEM in Rivers State.	3.56	0.76	Agree
Grand Mean		3.03	1.09	Agree

The results in Table 2 present a summary of descriptive statistics concerning the mean rating of barriers to female participation in STEM disciplines within tertiary institutions in Rivers State. The overall grand mean for the identified barriers is 3.03, with a standard deviation of 1.09. This indicates a general agreement among respondents regarding the presence and impact of these barriers on female participation in STEM disciplines. Breaking down specific barriers, respondents express agreement that gender biases and stereotypes discourage female

participation in STEM in Rivers State (Mean=2.89, SD=1.21). The absence of female role models is identified as a hindrance to women pursuing STEM careers (Mean=2.90, SD=1.16). Inadequate support and mentorship in tertiary institutions are recognized factors affecting the success of female STEM students (Mean=2.78, SD=1.21). Furthermore, limited access to educational resources and scholarships is acknowledged as a substantial barrier for women in STEM in Rivers State (Mean=3.56, SD=0.76). In conclusion, the respondents collectively acknowledge the presence of these barriers, highlighting the need for targeted interventions to address gender biases, provide role models, enhance support structures, and improve access to resources for female students in STEM disciplines within tertiary institutions in Rivers State.

Test of Hypotheses

Hypothesis One: There is no significant difference in the distribution of leadership roles between male and female participants involved in the implementation of educational policies in tertiary institutions in Rivers State

Table 3: Independent Sample T-test Analysis of Leadership Roles in the Implementation of Educational Policies in Tertiary Institutions in Rivers State

Variable	Gender	N	Mean	SD.	T	Df.	p-value	Decision
Leadership Role	Male	170	2.84	0.76	1.787	392	.075	NS
	Female	224	2.56	0.76				

NS: Not significant

Table 3 presents the results of the independent sample t-test, examining the difference between the mean scores of male and female participants involved in the implementation of educational policies in tertiary institutions in Rivers State. The analysis reveals a non-significant difference between male and female groups ($t = 1.787$, $df = 392$, $p = 0.075$), as the p-value exceeds the 0.05 significance level. Therefore, the null hypothesis is upheld, indicating that there is no substantial gender disparity in the leadership roles related to the implementation of educational policies among participants in tertiary institutions in Rivers State.

H₀₅: There is no significant difference in STEM participation between male and female participants in the implementation of educational policies in tertiary institutions in Rivers State.

Table 4: Summary of independent sample t-test on the difference between in STEM participation between male and female participants in the implementation of educational policies in tertiary institutions in Rivers State

Variable	Gender	N	Mean	SD	T	Df	p-value	Decision
STEM Participation	Male	170	3.19	0.57	-.799	392	.425	NS
	Female	224	3.14	0.66				

NS: Not significant

Table 4 presents the results of the independent sample t-test, examining the difference between the mean scores of male and female students regarding their STEM participation in the implementation of educational policies in tertiary institutions in Rivers State. The analysis

reveals no significant difference between male and female groups ($t = -0.799$, $df = 392$, $p = 0.425$), as the p-value exceeds the 0.05 significance level. Therefore, the null hypothesis is retained, suggesting that there is no substantial gender disparity in STEM participation related to the implementation of educational policies among students in tertiary institutions in Rivers State.

DISCUSSION

The Policies and Practices of Empower Female Students to Access Leadership Roles in Tertiary Institutions in Rivers State

The results in Table 1 provide a summary of descriptive statistics regarding the mean rating of policies and practices that can empower female students to access leadership roles within tertiary institutions. With grand mean of 2.88, $SD = 1.18$. the result showed that respondents strongly agree that ensuring gender-neutral recruitment and promotion to provide equal opportunities is crucial (Mean=2.99, $SD=1.07$). Support through mentorship from accomplished women is also recognized as beneficial (Mean=2.90, $SD=1.19$). Cultivating an inclusive environment for female students' confidence and leadership is seen as important (Mean=2.77, $SD=1.27$), as well as encouraging gender diversity in education to inspire female leadership (Mean=2.84, $SD=1.18$). Based on the responses from the respondents, it was concluded that the respondents collectively endorse the importance of these policies and practices in empowering female students to access leadership roles within tertiary institutions.

This result supports the findings of Duflo (2012) who stated that when women have a seat at decision-making tables, policies and practices are more likely to be equitable and responsive to the needs of diverse populations. In politics, increasing the representation of women in government can lead to policies that address gender disparities and promote women's rights. In the corporate world, gender diversity in leadership positions fosters innovative thinking and more inclusive workplaces. Women in leadership roles can serve as role models, inspiring the next generation of female leaders. Achieving gender parity in leadership positions involves overcoming systemic biases and structural barriers. This requires targeted efforts, such as quotas and affirmative action, as well as cultural shifts that challenge preconceived notions of leadership.

The Barriers to Female Participation in STEM Disciplines in Tertiary Institutions in Rivers State

The results in Table 2 present a summary of descriptive statistics concerning the mean rating of barriers to female participation in STEM disciplines within tertiary institutions in Rivers State. The overall grand mean for the identified barriers is 3.03, with a standard deviation of 1.09. This indicates a general agreement among respondents regarding the presence and impact of these barriers on female participation in STEM disciplines. Breaking down specific barriers, respondents express agreement that gender biases and stereotypes discourage female participation in STEM in Rivers State (Mean=2.89, $SD=1.21$). The absence of female role models is identified as a hindrance to women pursuing STEM careers (Mean=2.90, $SD=1.16$). Inadequate support and mentorship in tertiary institutions are recognized factors affecting the success of female STEM students (Mean=2.78, $SD=1.21$). Furthermore, limited access to educational resources and scholarships is acknowledged as a substantial barrier for women in

STEM in Rivers State (Mean=3.56, SD=0.76). In conclusion, the respondents collectively acknowledge the presence of these barriers, highlighting the need for targeted interventions to address gender biases, provide role models, enhance support structures, and improve access to resources for female students in STEM disciplines within tertiary institutions in Rivers State.

This study support the findings of Anderson (2017) who examined barriers to girls education in developing countries, came up with different explanations by raising the question why gender gap in different sectors.

CONCLUSION

This study underscores the urgent need to strengthen policies and practices that promote gender equity in tertiary institutions in Rivers State. Findings revealed that while women's enrollment in higher education has improved, their representation in leadership roles and participation in STEM disciplines remains disproportionately low. Persistent socio-cultural norms, institutional barriers, and limited gender-sensitive interventions continue to restrict female students' opportunities for advancement. To achieve the goals of inclusive education and national development, tertiary institutions must adopt comprehensive gender-responsive strategies, including mentorship programs, leadership training, and targeted STEM initiatives. Equally important are policies that dismantle stereotypes and create enabling environments for women to aspire to leadership and excel in science-based fields. Hence by promoting gender equity in governance and academic disciplines, Rivers State institutions can foster a more diverse and competitive academic community and contribute meaningfully to Nigeria's broader educational and socio-economic transformation.

Recommendations

Based on the findings of the study, the following recommendations were proffered:

- Higher education institutions must design initiatives that encourage gender-balanced participation in STEM fields to address existing disparities and foster diversity.
- Higher education institutions must encourage and facilitate ongoing research to explore nuanced factors that influence gender disparities in tertiary education for a more comprehensive understanding.

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