

ADVANCING INNOVATION, EQUITY, AND SUSTAINABILITY THROUGH WOMEN'S WORK: A CASE STUDY OF FEMALE ACADEMIC STAFF OF SA'ADATU RIMI COLLEGE OF EDUCATION, KANO

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ISSN: 1119-4596

Submitted at the 3rd National Conference of the School of Secondary Education (Arts and Social Sciences), October 2025. Published as a Special Edition, January 2026

ABSTRACT

This study examined the role of female academic staff in advancing innovation, equity, and sustainability at Sa'adatu Rimi College of Education, Kano. Employing a descriptive case study design, data were gathered from through google form questionnaires sent to female academic staff WhatsApp platform. The study targets 104 respondents through Cochran's sampling technique from a frame of 219 throughout all the six schools of the college of education. Findings revealed that women contributed significantly to institutional innovation through pedagogical creativity, curriculum reform, mentorship, and community-based sustainability initiatives. Their efforts also enhanced gender equity by promoting inclusive participation and mentoring female students. However, the study identified key challenges limiting their engagement, including workload imbalance, limited access to research funding, socio-cultural barriers, and inadequate institutional support. Respondents emphasized the need for gender-responsive policies, research grants, leadership training, and childcare support systems to strengthen women's academic participation and sustainability outcomes. A major setback for the study is the poor responses received due to failure of the respondents to fill the forms sent. However, the study concludes that empowering female academic staff through inclusive institutional frameworks is essential for achieving innovation and sustainable educational development in Nigerian colleges of education.

Keywords: Women in academia; innovation; gender equity; sustainability; institutional policy; higher education.

INTRODUCTION

Women's work whether in homes, markets, farms, classrooms, laboratories, or boardrooms has become a powerful driving force for innovation, equity, and sustainable development in today's world. Across communities, women's daily contributions often emerge from a deep commitment to care, resilience, creativity, and problem-solving, enabling them to design practical solutions that respond directly to social and economic needs. However, much of this work remains overlooked or undervalued, despite its critical impact on strengthening families, shaping institutions, and transforming societies. Advancing innovation through women's work therefore requires recognising their diverse roles, expanding opportunities, and removing long-standing barriers that limit their full participation. By placing women's experiences and voices at the centre of development efforts, societies can unlock more inclusive systems, fairer access to resources, and sustainable pathways that benefit everyone.

Women's participation in higher education has become a cornerstone for achieving innovation, equity, and sustainable development in Nigeria (Offor & Onunkwo, 2023; Adamu & Balogun, 2025). Across Nigerian tertiary institutions, female academic staff play critical roles through teaching, research, and community engagement, yet their full potential to drive institutional innovation and sustainability remains underexplored (Ogunode & Adelagun, 2023; Ajani & Balogun, 2024). Empirical studies emphasize that empowering women in academia enhances not only gender equity but also institutional creativity, inclusivity, and social transformation (Akinsola, Olaseni, & Bademosi-Ekunpa, 2025; Funlayo, 2024). Despite national commitments to gender inclusion, the Nigerian higher education landscape continues to reflect significant disparities. As of 2019, women accounted for only about 23.7% of total academic staff, with merely 15.2% attaining professorial ranks (Dataphyte, 2023). The situation is even more pronounced in Northern Nigeria, where socio-cultural barriers,

limited access to resources, and uneven institutional policies have restricted women's advancement (Ogunode & Hassan, 2023; Ayo-Akinjobi, 2024). Studies from Federal University Gusau and Umaru Musa Yar'adua University, for instance, show disproportionately low female representation among academic staff (Abdullahi & Yusuf, 2023).

In Colleges of Education, where teacher preparation and curriculum development are central to national progress, women's participation remains comparatively low. Northern institutions such as Sa'adatu Rimi College of Education face additional challenges of inadequate infrastructure, digital limitations, and policy gaps that hinder women's active involvement in innovation and sustainability practices (Olatunji & Hassan, 2024). Research further indicates that while sustainability-related courses and initiatives are emerging, few institutions in the North have established structured policies or sustainability units (Ogunode & Adelagun, 2023). Nationally, Nigeria's Global Innovation Index score remains modest, about 17.1 in 2024, ranking 105th globally, highlighting the need for improved institutional mechanisms to foster innovation and inclusion (The Global Economy, 2024; ThisDay, 2025). The absence of gender-responsive innovation frameworks in education compounds this gap, leaving the contributions of female academics largely invisible in formal innovation and sustainability metrics (Akinsola et al., 2025; Ajani & Balogun, 2024).

The study focuses on female academic staff at Sa'adatu Rimi College of Education. It seeks to answer the following questions:

- i. How do female academic staff contribute to innovation, equity, and sustainability in Sa'adatu Rimi College of Education?
- ii. What challenges limit their participation in these areas?
- iii. How can institutional policies better support women's roles in achieving sustainable development?

Research Objectives

- i. To examine women's contributions to innovation, equity, and sustainability in the College.
- ii. To identify key challenges affecting their participation.
- iii. To suggest ways to strengthen institutional support for women's engagement in sustainable development.

LITERATURE REVIEW

Women's work has long been recognized as a critical driver of innovation, equity, and sustainable development. In Nigeria, the role of female academics in higher education is continuously gaining grounds, especially regarding their contributions to institutional transformation and community engagement. However, empirical connections between women's academic work and the achievement of innovation, equity, and sustainability remain underexplored (Ogunode, 2023; Ayo-Akinjobi, 2024). Studies consistently affirm that women academics make meaningful contributions in teaching, research, and community service (Ogunode & Adelagun, 2023; Ogunode & Hassan, 2023). They help strengthen institutional quality, knowledge creation, and mentorship while promoting inclusive educational environments. Nevertheless, their participation in leadership and policy-making remains limited due to gender bias, cultural expectations, and institutional bottlenecks (Ayo-Akinjobi, 2024; Offor & Onunkwo, 2023). Note that despite strong professional performance, female academics face cultural and religious barriers, early marriage, inadequate gender-policy implementation, and weak institutional support mechanisms. Similarly, Ayo-Akinjobi (2024) finds that mentorship gaps, discrimination, and domestic responsibilities constrain career progression among female professionals in academia.

Furthermore, although women's representation in Nigerian tertiary institutions is improving, the proportion of women in senior ranks remains low. Ogunode and Hassan (2023) stress that this imbalance undermines institutional innovation and

sustainable decision-making. They argue that for innovation and equity to thrive, women must have equal opportunities in leadership, research funding, and participation in strategic planning. Emerging studies link innovation with digital and financial inclusion. Funlayo, Adeleke, Ifunanya, and Igbolekwu (2024) show that access to digital financial services significantly enhances women's empowerment and innovation capacity, enabling them to improve productivity and create new social and economic opportunities. Yet, the benefits of digital inclusion are uneven because many women lack the digital literacy, infrastructure, or institutional backing necessary to sustain innovative practices. Similarly, Akinsola, Olaseni, and Bademosi-Ekunpa (2025) conducted a decade-long review of women in science, technology, engineering, and mathematics (STEM) and found that women's resilience drives innovation despite institutional and cultural constraints. They argue that structured support systems, mentorship, and gender-sensitive policies are crucial to sustain innovation in academia and the broader economy.

Women's Empowerment, Equity, and Sustainable Development

Beyond innovation, women's work is essential for achieving equity and sustainable development. Offor and Onunkwo (2023) highlight that women serve as agents of social change through community mobilization, leadership, and advocacy. They emphasize that enhancing women's access to education and economic participation leads to inclusive growth and environmental sustainability. In the same vein, Adamu and Balogun (2025) assert that higher education empowers women to improve research productivity, decision-making capacity, and national economic resilience. Ajani and Balogun (2024) add that integrating sustainability concepts into higher education curricula, especially in business education, remains challenging due to rigid curricula, inadequate funding, and lack of institutional coordination. Their study, however, does not specifically analyze the gendered dimensions of innovation or the role of female

academic staff in embedding sustainability practices. This gap highlights the need for case-specific investigations into how female educators drive institutional sustainability. Empirical evidence focusing specifically on teacher-training institutions, such as Sa' adatu Rimi College of Education, remains scarce. Previous studies on the college emphasize academic performance, career maturity, and attitudes but rarely assess how female academic staff initiate innovation or sustainability practices within the institution (Guardian, 2024). The recent conversion of Sa'adatu Rimi University of Education back to a College of Education provides a changing institutional environment that may either constrain or enable new forms of innovation and equity leadership among female staff.

A consistent methodological weakness in existing literature is the predominance of cross-sectional, perception-based studies that rely on small samples and lack institutional data triangulation (Ogunode & Hassan, 2023; Ajani & Balogun, 2024). Few studies use measurable indicators such as new courses introduced, research grants secured, community projects led, or sustainability programs implemented to quantify women's contributions to innovation and development. However, several gaps remain despite the extensive literature on women's empowerment. Few studies examine how age, rank, discipline and family responsibilities shape women's capacity for innovation (Akinsola et al, 2025)

METHODOLOGY

The population for the study is made up of 219 female academic staff across the six Schools of the College. The study adopted Cochran sampling technique where the formula for sample size computation is given as:

$$n_0 = \frac{Z^2 Pq}{e^2}$$

Where $Z = 1.96$, $p = 0.5$, $q = 1 - 0.5$ ($1 - 0.5 = 0.5$)
 $e^2 = 0.052 = 0.0025$

Hence

$$p.q = 0.25 \text{ and } Z^2.p.q = 1.962 \times 0.5 \times 0.5$$

$$n_0 = (3.842 \times 0.25) / 0.0025 = 0.9604 / 0.0025 = 384.16.$$

So with a population of 219 the finite population correction (adjusted sample size) is computed using the following formula:

$$n = N \cdot n_0 / N + n_0 - 1$$

$$n = (219 \times 384.16) / (219 + 384.16 - 1)$$

$$n = 84,131.04 / (602.16) = 139.72$$

$$n \approx 140$$

All things being equal the required sample at 5% margin of error should be 140 for a population of 219. However, we considered a moderate margin as given by Cochran, that is 7% margin of error and the new and adopted sample for the study stood at 104.

This sample was computed via:

$$n = 0.9604 / 0.0049 = 196$$

The adjusted finite population sample is:
 $(219 \times 196) / (219 + 196 - 1) = 42,924 / 414 = 103.68$

$$n \approx 104$$

With this sample, Google form was designed and shared to the women in colleges of education WhatsApp platform and response were generated for the analysis. All things being equal the study intended to use multiple regression tool of analysis to model the contribution of female academic staff of Sa'adatu Rimi College of education against six predictors: Academic Rank, Years of Service, Access to Leadership Opportunities, Research Participation, Mentorship Received and Institutional Support. The relationship is modeled as follows:

$$FASC = \beta_0 + \beta_1 AR_1 + \beta_2 YS_2 + \beta_3 ALO_3 + \beta_4 RP_4 + \beta_5 MR_5 + \beta_6 IS_6 + \mu$$

(FASC refers to Female Academic Staff Composite contribution to Advancing Innovation, Equity, and Sustainability through β_0 – slope and all the values of β are the intercepts while μ captures the unobserved random error variable not utilized in the model.

However due to poor response from the respondents, the study resorted to adopting

descriptive design to explore the role of female academic staff in advancing innovation, equity, and sustainability within Sa'adatu Rimi College of Education, Kano. Data were collected from only thirty five respondents. Thematic analysis was employed to interpret views of the respondents, while descriptive statistics supported quantitative summaries.

The instruments used in the questionnaire was adopted from Academic Gender Equity Questionnaire which involves 21 items focused on teaching, research, service, mentoring, recruitment and leadership.

FINDINGS AND DISCUSSION

Contributions to Innovation, Equity, and Sustainability

Findings revealed that female academic staff significantly contribute to institutional innovation through pedagogical creativity, mentorship programs, and gender-inclusive curriculum reform. Respondents emphasized their role in promoting equity by mentoring younger female students and encouraging inclusive participation in academic activities. Moreover, sustainability was reflected in their community outreach projects, research on environmental education, and promotion of economic self-reliance among teacher trainees. These findings align with Mordi et al. (2022), who found that women in academia serve as agents of transformative learning and institutional development in Nigerian colleges.

Table 3.2: Contribution of female academic staff to innovation, equity and sustainability

Area of Contribution	Freq (n=35)	Perc (%)
Curriculum Innovation	25	71.4
Mentorship & Guidance	30	85.7
Pedagogical creativity	20	57.1
Research for Sustainability	18	51.4

Source: Researchers' analysis of findings, 2025

As shown in Table 3.2, over 80% of respondents actively engage in mentorship and guidance, demonstrating their strong contribution to equity

and inclusive education. This supports Odejide (2021), who reported that female academics enhance social justice and gender balance within Nigerian tertiary education settings especially when they're assign mentorship roles.

Challenges Limiting Participation

Despite their active roles, several challenges limit the participation of female academic staff in innovation and sustainability initiatives. These include workload imbalance, limited access to research funding, and cultural constraints that reduce women's leadership visibility. Similar patterns were reported by Aina (2019) and Okpara (2020), who identified gender-based barriers in institutional promotion and research grants allocation. Respondents also cited inadequate childcare support and insufficient digital infrastructure as hindrances to academic innovation and participation in collaborative research.

Table 3.3 Challenges Limiting Participation

Identified Challenge	Freq (n=35)	Perc (%)
Workload imbalance	28	80.0
Limited research funding	30	85.7
Cultural constraints	22	62.9
Childcare responsibilities	25	71.4
Digital infrastructure gaps	18	51.4

Source: Researchers' analysis of findings, 2025

The findings affirm that structural and socio-cultural barriers significantly hinder female staff development. In line with UNESCO (2021), institutional transformation toward gender equity must involve proactive measures addressing both systemic and environmental limitations.

Institutional Policies and Support

Respondents emphasized the need for gender-responsive institutional policies that prioritize professional development, equitable promotion, and research support. Establishing childcare facilities, mentorship networks, and leadership training programs were considered critical for

improving female staff engagement in sustainable initiatives. As noted by Olayanju and Adedeji (2023), supportive policies are key drivers of inclusive academic governance and sustainable institutional performance.

Table 3.4 Institutional Policies and Support

Proposed Policy Support	Freq (n=35)	Perc (%)
Childcare and family support	26	74.3
Research grants for women	28	80.0
Mentorship and leadership training	32	91.4
Flexible work schedules	20	57.1

Source: Researchers' analysis of findings, 2025

As indicated in Table 3.4, a majority (91.4%) supported the introduction of mentorship and leadership training for women, reflecting a shared belief that institutional empowerment fosters long-term sustainability. This resonates with the African Union's (2022) agenda on gender equality in higher education, which underscores policy mainstreaming as a pathway toward innovation and sustainability.

CONCLUSION AND POLICY IMPLICATIONS

The study concludes that female academic staff of Sa'adatu Rimi College of Education play a pivotal role in advancing institutional innovation, strengthening gender equity, and supporting the long-term sustainability of educational reforms. The findings reveal that women contribute significantly through pedagogical creativity, active mentorship, and the championing of gender-inclusive curriculum reforms. Their influence also extends to nurturing younger female students and promoting broader participation in academic activities. However, despite these notable contributions, their full participation in innovation and sustainability initiatives is hindered by workload imbalance, limited access to research funding, and deep-rooted cultural constraints that diminish women's visibility in leadership. Respondents further underscored the urgent need for gender-responsive institutional policies that prioritize equitable promotion, professional development opportunities, and accessible

research support. Proposed interventions such as establishing childcare facilities, building mentorship networks, and introducing leadership training programs were viewed as essential for enhancing the engagement of female academic staff. Overall, the study highlights a strong consensus on the importance of empowering women through targeted institutional support, noting that such empowerment is fundamental to sustaining innovation, promoting equity, and ensuring the long-term development of the College. Hence these recommendations were deduced from the responses:

- i. Inclusive policies that provide research funding opportunities through rationing, random selection or special nomination;
- ii. Family support should be enhanced through the provision of good child day care services at affordable cost to satisfy the quest of nursing mothers for a sound and convenient custody of their off springs;
- iii. Ensuring sustained equity and innovation across academic programs through embedding gender-sensitive frameworks within strategic plans.

Limitation to the study

The study was limited by very low response from the respondents proving the negligence of the female academic staff to benefit from the bounties of technology.

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