

Women Engineering Faculty in Nigeria: A Narrative Review and Qualitative Research Agenda on Researcher Identity

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Abstract

Across the globe, women continue to experience exclusion from engineering and engineering academia, despite decades of diversity efforts. In Africa, these inequities are compounded, as the women STEM faculty face added constraints, including patriarchal university systems, traditional gender expectations, poor institutional support, limited research infrastructure, and epistemic injustice. This literature review set out to examine the experiences of Nigerian female engineering faculty, yet the search did not identify peer-reviewed studies that explicitly center this group. Existing research largely centers on women in STEM faculty more broadly, women of color in academia, and African women in higher education. These studies highlight enduring barriers: unequal service loads, chilly and unwelcoming climates, discrimination, invisibility, identity taxation, microaggressions, and structural inequities that limit career progression. To situate this absence, the review synthesizes global and African scholarship on women in STEM and higher education through three guiding questions: (1) What barriers and institutional conditions shape women's participation and advancement in STEM academia? (2) How have researchers theorized and addressed these barriers across contexts? (3) How might these insights inform a conceptual framework for examining the experiences of Nigerian female engineering faculty? By identifying these gaps, the paper charts a research trajectory toward a qualitative study that centers these women's voices and narratives, examining how they confront systemic barriers, navigate institutional cultures, and make meaning of their professional identities. Ultimately, this paper seeks to extend the global equity discourse (by rendering visible what remains unseen) and to propose contextually grounded insights for culturally responsive and sustainable interventions that

advance engineering education and faculty development across West Africa, promoting the visibility and success of women in engineering education everywhere.

Methodological Approach

This paper uses a narrative literature review with scoping elements to map what is known about women's experiences in STEM faculty roles and to assess whether peer-reviewed scholarship exists that explicitly centers Nigerian female engineering faculty. Because the review aim included identifying an absence (i.e., whether a body of work exists at all for a specific population), an iterative, exploratory search process was used rather than a strictly bounded systematic review protocol.

Searches were conducted in Fall 2024 using Google Scholar, Scopus, and a large R1 university library system (to access discipline-specific indexes and full-text holdings). Searches were run multiple times across the semester as keywords and inclusion decisions were refined based on early results. Initial searches combined four concept clusters: population terms (women, female faculty, women academics), context terms (STEM, engineering, engineering education), role terms (faculty, academia, lecturer, professor), and geography terms (Nigeria, West Africa, sub-Saharan Africa, and selected African country names when relevant).

Because the most direct combinations (e.g., “Nigerian women engineering faculty” + “researcher identity”) yielded little to no eligible peer-reviewed work, the strategy expanded to capture adjacent and comparably positioned populations (e.g., women in STEM faculty broadly; women of color in engineering academia; African women faculty in higher education). This expansion was conceptually guided by the review's motivating problem statement and research questions about barriers, institutional conditions, and women's meaning-making within academic

work. In addition to database keyword searching, the review used snowballing (reference list screening of highly relevant papers) and citation chasing (reviewing newer papers that cited foundational or especially relevant studies) to identify literature not easily retrieved through keywords alone.

Works were included if they were peer-reviewed journal articles, conference papers, or scholarly book chapters; addressed women faculty/academic staff experiences in STEM or higher education (including engineering-specific studies where available); and provided empirical findings (qualitative, quantitative, or mixed methods) and/or widely cited conceptual syntheses relevant to barriers, climate, advancement, and professional identity. Works were excluded if they focused primarily on students rather than faculty (unless the paper directly informed the academic pipeline into faculty roles); were not accessible in full text through available library access; and were editorials or commentary pieces without substantive analytic content (used only for contextual framing when necessary).

Titles and abstracts were screened first for relevance to (a) women's faculty experiences in STEM/engineering, and (b) African/Nigerian context. Full texts were then reviewed to confirm fit and to extract key themes (e.g., climate and belonging, service and workload inequities, mentoring/networking, promotion and evaluation, discrimination and microaggressions, (hyper)visibility, and structural constraints). The synthesis proceeded thematically, organizing studies into three major bodies of scholarship reflected in the review structure (women STEM faculty broadly; women of color STEM faculty; African women in higher education/STEM), and using these bodies to make the central interpretive point: the absence of direct scholarship on Nigerian female engineering faculty is itself a consequential finding that warrants a context-specific qualitative study.

This review does not claim exhaustive coverage of all possible databases or grey literature. The search process was shaped by practical constraints of discoverability (especially for Nigerian engineering faculty scholarship that may be under-indexed), database coverage, and keyword sensitivity. However, by triangulating across Google Scholar, Scopus, and library databases, and by using backward/forward searching, the review provides a credible overview (or map) of the existing peer-reviewed research in the field. It also explains clearly how and why the scope of the review had to be broadened when the search did not retrieve direct evidence for certain points.

Women STEM Faculty

Historically, women have experienced exclusion from engineering and engineering academia, and continue to (Hicks, 2021; Leonard & Nicholls, 2013). To combat this, numerous efforts have aimed to increase both the representation and advancement of women in STEM disciplines. The National Science Foundation's (NSF) ADVANCE umbrella program has broadened the representation and participation of diverse people and institutions since 2001 by fostering institutional transformation and improving the overall climate for women faculty in STEM (Furst-Holloway and Miner, 2019; Grant et al., 2018; Odun-Ayo et al., 2024; Rosser, 2006; Yen et al., 2007). In a comparable context, Smith et al. (2018), using a longitudinal design, demonstrate a positive relationship between the involvement in “Project TRACS” (a diversity program) and increased job satisfaction and psychological need satisfaction, revealing that creating and maintaining supportive and inclusive environments for women faculty ultimately benefits everyone involved. Interventional programs like these foster communication and leadership skills, boost confidence and provide support for the participating women, although evidence suggests effects may be short-term (Chesler et al., 2003).

These efforts are not only important for improving faculty diversity and inclusion, but also are aligned with key human resource development areas of expertise (Hutchins & Kovach, 2019). However, despite these many initiatives, much more needs to be done to achieve true inclusivity (equitable access and participation for all). Several studies reveal the ongoing challenges faced by women in STEM. Women in STEM academia tend to have more service workloads when compared to their male colleagues, and this service inequality links to slower promotion rates and dissatisfaction for these women (Hart, 2016; O'Meara et al., 2017; Ward, 2008). Women often find the academic climate as unwelcoming (chilly), which harms their productivity and career advancement (Tamada et al., 2024), or with department chairs that lacked the training or understanding to effectively advocate for them (Jones & Pal, 2024). They also face gender discrimination and stereotypes about competence (Ward, 2008; Williams, 2006), greater scrutiny and ambiguous criteria in promotion processes (Casad et al., 2021; Lisnic et al., 2022; Yan et al., 2012), pregnancy bias (Olabisi, 2021), exclusion from opportunities and networks because men prefer to collaborate with other men (Collins & Steffen-Fluhr, 2019), microaggressions in the classroom (Berdanier et al., 2017; Howe, 2010), and (hyper/in)visibility (Miller et al., 2023). Early-career women STEM faculty have it worse (Miner et al., 2019), as they report even greater degrees of ostracism and incivility.

Notably, Judson et al.'s (2019) work suggests a possible shift in the attitudes of engineering faculty, implying that the substantial research and ongoing efforts towards gender equity in academia is beginning to positively influence faculty perspectives. Their study finds that “Cathy” was more likely to be preferred for both leadership and research positions over “Charlie.” Similarly, Ginther (2008) analyzed data, using economic theory, from the 2001 Survey of Doctorate Recipients (SDR) and finds that men and women in engineering have equal chances of

obtaining tenure and promotion, especially when compared to the gender gap in promotions and salaries in the social sciences. Blackburn (2017), in their comprehensive thematic review of literature on the status of women in STEM, concludes that although meaningful progress has been made toward gender equality in STEM higher education, substantial work remains. Women, based on accounts of their lived experiences, continue to confront the challenges described above throughout their academic careers. Therefore, while it appears that some metrics indicate improvement for women STEM faculty (Cauble et al., 2000), Xie (2006) cautions that women's underrepresentation is so deeply rooted and complex, that there are no simple or easy fixes, and that "instead we should look at the actual social processes that generate gender differences in science, and base policy interventions on empirical knowledge about these processes" (p. 174).

There has, undoubtedly, been some progress in understanding the lived experiences of female (STEM) faculty globally. Yet much of this scholarship is grounded in Western institutional contexts, where the categories of support, evaluation, and academic labor are often assumed to be broadly comparable. For the goal of this review, Nigeria is not an "add-on" location; it is the point of inquiry. The concern extends beyond confirming that women faculty encounter barriers in STEM to examining how these barriers are constructed, amplified, or transformed within the specific institutional cultures and engineering departments of Nigerian universities, and how such dynamics shape women's professional identities and research lives.

Women of Color STEM Faculty

While universities—Historically Black Colleges or Universities (HBCUs) especially—produce a significant proportion of African American engineers yearly (Holly, 2020; Stephens & Wilson-Kennedy, 2019), and more underrepresented minority (URM) women earn doctorates in the sciences (Towns, 2010), women of color represent only 2% of tenured STEM faculty (Lane et

al., 2023; Main et al., 2021). They also occupy few senior faculty or administrative roles (Main et al., 2023), with white men continuing to hold the largest portion of faculty positions (Jackson & O’Callaghan, 2008). Berry et al. (2014) write: “little is known about the quality of the collective experiences of African American women academics in engineering and the distinct issues that African American women encounter” (p. 2). The same is said for Asian-American female faculty in engineering (Sambamurthy et al., 2016). Gumpertz et al. (2017), in their attempt to understand how retention patterns vary across disciplines, admit that the extremely low representation of underrepresented minority (URM) faculty hindered their ability to fully understand the factors that affect their retention and success. There is, therefore, an urgent need to enhance access and success for Women of Color (WoC) in STEM Faculty positions, by first recognizing and valuing their unique perspectives and lived experiences.

Egbue et al. (2019) articulate some of the factors that influence the workplace climate for female faculty of color in the United States and Canada—factors like stereotype, stereotype threat, gender bias, teaching and research evaluations, recruitment and retention. They state that while women are likely to experience these barriers, women of color have to deal with these in compounded ways because they face the combined pressure of both gender and race stereotypes. Similarly, Corneille et al. (2019), in their qualitative meta-analysis, find that the teaching and service loads of African American women were significantly higher than their white faculty counterparts, due to requests from administrators and marginalized students, and also often driven by a sense of duty to serve as mentors and role models.

While mentoring networks are crucial for the career development of WoC engineering faculty’s development and persistence, Crawford (2015) finds that some WoC STEM faculty have no official mentor, no senior faculty guiding and helping them get ahead. And when there is some

fashion of formal mentoring, WoC engineering faculty find these formal mentoring relationships unsatisfying, and would rather strategically and proactively build mentoring networks (human and non-human actors) tailored to their individual needs and career stages (Long et al., 2013). Buzzanell et al. (2015), in their study, explore why WoC engineering faculty may find themselves as outsiders in traditional mentoring settings—like “mentoring workshops and a ‘faculty success program’ that help [them] ‘stay on track’ and ensure that [they] are ‘making progress’ with ‘accountability’” (p. 444). They find that the generic and monolithic aim of mentoring to recruit, retain, and advance underrepresented minority groups, by its very nature, fails to account for the individuals’ diverse experiences. To this genericity of mentoring approaches, Nkrumah and Scott (2022) argue that structural organization of mentoring models for WoC STEM faculty is only truly effective when it adopts an intersectional lens, a truly transformational mentoring model that creates spaces for open and honest dialogue about the nuanced challenges faced by women of color in STEM higher education, and how exactly they want to be supported (Lottero-Perdue, 2013).

E. O. McGee et al. (2021) take a different approach from the usual mentoring and work-life balance lens to explore the experiences of WoC in engineering faculty. They find that women of color engineering faculty members persist and thrive when they have supportive colleagues and leadership within their departments and institutions. Misra et al. (2024) find also that the more diverse a department is, the more likely its faculty to perceive it as inclusive, which is especially true for women of color who find their departments to be less inclusive. However, Baker and Koedel (2024) observe that while gender diversity in STEM fields has improved, racial-ethnic gaps have widened since 2015-2016, particularly for Black faculty. Their findings suggest that black women engineering faculty may continue to find their departments as not inclusive, even amidst all the increased diversity efforts.

In STEM, the ‘ideal worker norm’ that persists—rewarding only those with unbroken career trajectories—engenders the engineering academic environment, disproportionately impacts WoC, and impact their career progression (Kachchaf et al., 2015), even for female faculty in two-year colleges (Koonce et al., 2010). One of the unique challenges faced by WoC engineering faculty as evident from the findings from the work of Turner et al. (2011) reveal that WoC are often accused of trying to “game the system” when they request accommodations—say an extension of tenure clock. The authors also observe that universities are so decentralized and siloed that WoC are often unaware of institutional diversity efforts that could benefit them. This communication gap has severe consequences, because as tokens with arbitrary success metrics and having inequitable service and mentoring loads, they have few opportunities to connect with other WoC to learn about these opportunities. Furthermore, the service loads—often involving diversity work—are undervalued and not considered significant for tenure. As one participant in the study’s focus group shared, “I was forbidden from [including] that part [in my tenure and promotion file]” (p. 206). E. O. McGee et al. (2022) reach a similar conclusion: if the burden of diversity and inclusion falls disproportionately on Black engineering faculty, then their contributions to the university should be valued and rewarded, rather than coming at the expense of their own research and scholarship—often referred to as “the Black tax” or “cultural taxation.” Jauchen (2023), in her reimagination of DEI service as not just a burden but a form of critical agency, yet she concludes with: “DEI service is labor and it is undervalued” (p. 69).

Not only do WoC engineering faculty experience identity taxation, but they also experience wage disparities—lower salaries and raises—due to racial and gendered stereotypes (E. McGee et al., 2024; E. O. McGee et al., 2023). The authors find that WoC engineering faculty often adopt different strategies (like avoidance, reframing, and disengaging) to self-preserve from backlash

and retaliation (Chen et al., 2019) and damage (Fox & Colatrella, 2006). Liu et al. (2019) critique the tempting “Just say No!” strategy fed to WoC STEM academia, asking them to stand up and speak for themselves. They argue that this strategy does not address the deeper problems, and even worse, invites criticism. Administrations often avoid addressing diversity and inclusion issues to avoid conflict, dismissing them as “minority” concerns and disruptive, and not as matters of fairness and accountability (Whittaker et al., 2015). And even when women rise to leadership positions, as is the case in Layne's (2010) work, these twenty-one female deans of engineering share how they also face a double bind—seen as too feminine and so lack leadership skills or seen as assertive and so deemed unfeminine—revealing that individual assertiveness is not solution enough.

Rodrigues et al. (2021) present excerpts from interviews with WoC STEM faculty, exposing instances of insidious and pervasive hostility, incivility, and gendered/racial harassment these women face and endure. Whether grappling with job insecurity (if non-tenure track) or striving for tenure (if tenure-track), WoC often internalized these experiences even after getting tenured. Their findings also reveal how WoC experience gaslighting even from supposed white allies and colleagues, who try to diffuse or minimize the severity of the situation; and how these women try to make sense of their overlapping oppressions: “Are you reacting to me because I’m a woman? Because I’m, like I said, a person of color? Is it because of my age and that I look like I’m a student” (p. 13), a participant shared. The authors find that WoC externalize negative experiences and “affirm [their] interpretations of the experience” (p. 16) by talking to and seeking support from another WoC colleague. DeCuir-Gunby et al. (2013), in their study, find that family also plays an important role in supporting and shaping the career trajectories of African American and Latina Engineering professors.

Armstrong and Jovanovic (2015) propose various opportunities to implement intersectionality approaches for driving institutional change—such as rethinking how data is gathered and disaggregated, and how we understand how systems work to empower some and disempower others. Along these lines, Zang (2024) provides practical tools and practices, drawn from personal experiences, to help new female faculty navigate their complex roles in engineering spaces that may, at times, feel exclusionary. These tools include creating an inclusive classroom (such as emphasizing diversity statement), strategies for teaching effectively (that align with the new faculty’s teaching philosophy), and providing real world connections for students—even in the face of students’ biased perceptions and poor evaluations of their teaching performance (Crawford, 2014; Leung et al., 2020). While Zang encourages new female STEM faculty to engage in service (academic, department, program, professional and community), so they can build and establish meaningful connections, the author emphasizes that they prioritize self-care and work-life balance.

On the one hand, scholars like Woods et al. (2024) who challenge institutions to better support and retain their diverse faculty by critiquing the nebulous policies, vague performance metrics and inequitable workloads placed on WoC STEM faculty. On the other hand, some scholars like Campos et al. (2021) who, although, propose three effective interventions to promote the inclusion of underrepresented minority faculty in STEM—such as fostering allyship and accountability—go ahead to justify the importance of diversifying STEM faculty, implying that it would significantly contribute to the advancement of the US research enterprise, particularly because “URM faculty are deeply committed to giving back to their communities” (p. 865). Taken together, King and Upadhyay (2022) write that “to increase and diversify representation in the faculty ranks, equity, diversity, and social justice agendas must be grounded in the moral

imperative of true justice for the overall wellbeing of Black and Brown early career scholars” (p. 1168).

This section clarifies how race and gender interact to shape visibility, legitimacy, workload, and the emotional labor of “belonging” in academic STEM spaces. However, because these studies are largely situated in racialized Western university contexts, they cannot simply be mapped onto Nigeria, where institutional dynamics are differently organized. To understand what travels across contexts—and what does not—the review turns next to African scholarship on women faculty and the institutional conditions that structure academic work on the continent.

African Women (STEM) Faculty

Due to the limited literature on African Women STEM faculty, this section of the review was expanded to include studies on African women in higher education (HE) more broadly. While it will highlight the racialized experiences of African women in higher education, the primary focus is on uncovering literature related to the non-racialized experiences of African women in HE.

African women (in STEM) faculty remain underrepresented in African academic institutions, particularly in senior positions (Mama, 2003; Mosuro et al., 2023). Mlambo (2021), in her attempt to understand the underrepresentation of South African women in engineering academia, interestingly finds that women engineers “saw higher education lecturers as equivalent to their primary and high school teachers, integral in getting them to move on to their next educational phase, but not as career role models whom they themselves might wish to become one day” (p. 168). This, and the other factors (like whiteness as the norm, unwelcoming campus climate) contribute to the reason black African women engineers do not consider academia as a

career (socio-economically) rewarding enough, especially when compared to industry careers. Similarly, to understand the underrepresentation of women in higher education, especially at higher ranks, Aluko et al. (2017), in their study, examined the career progression of “early-career” female academics in two Nigerian universities. They find that some of these women remained in the same position from their first appointment, despite many years of service to the university and meeting promotion criteria, such as obtaining a PhD or publishing articles. They also find that for some others, marital and household obligations made it difficult for them to meet the publishing productivity criteria needed to advance, even though they met other promotion criteria like service and teaching loads.

In Ethiopia, as Tassew et al. (2021) observe, female academics share that it is difficult for them to take on administrative roles because of family responsibilities that deter them, as well as attitudes of male faculty who use these responsibilities as a weapon against them. As a participant shared: “The position was requiring a demographer and I was one of the few applicants who had the qualifications. They did not want to give me the position using my breastfeeding status as a pretext. The oppositions to waiver you in your back and you do not know when you fail” (p. 34). The authors also find that due to poor remuneration, female academics are compelled to seek or engage in part-time jobs to make ends meet. Muberekwa and Nkomo (2016) write about this conflict African women in HE face: the conflict between performing the traditional gender roles expected of them in the society they grew up in and live, and fitting in academia (to produce knowledge). This conflict is especially heightened because these “women in academia do not want to give up their traditional roles as partners, wives, aunts, sisters, and mothers in their own home settings” (p. 7). Johnson's (2014) work highlights how female faculty, even at high administrative levels, continue to perform traditional gender roles. One of the participants in the study shared: “In

spite of it all I'm still a mother of a family, I take care of my husband, I take care of my child. I take care of my house, like [all women]" (p. 842).

Tsikata (2007) examines how African women faculty negotiate this conflict within a university's context that claims institutional neutrality but, in practice, offers no meaningful support for female faculty who are bearing and raising young children. Through the stories of two female faculty in their fifties, Tsikata reveals the consequences of this lack of support: "by this time they were also older, and certain opportunities (such as scholarships for PhD training) had age limits, thus disqualifying them" (p. 35). Yet African female academics are still expected to marry and bear children (also noted by Mkhize, 2023)—even if doing so would negatively impact their publication productivity, whereas it would positively impact it if they were male (as observed by Fisher et al., 2020). They are too to expect that these maternal and wifely roles would carry into the workplace, reinforcing traditional gender norms—as also observed by Mama (2003) who find that female faculty, even when in 'leadership' roles, are often in offices that are often considered to benefit from a "feminine touch" (p. 118). Tsikata notes that female faculty were commonly addressed as "Auntie" and "Mama" while their male counterparts were addressed by their academic titles—a point similarly noted by Van Houweling et al. (2020). Additionally, female faculty had to endure jocular remarks with sexual undertones and faced ageism if they were younger or small.

Still on the theme of women's underrepresentation and participation at senior management or administrative positions in HE, Eboiyehi et al. (2016) identify one reason: men had higher and more academic qualifications. They write: "For someone aspiring for the positions of Vice-Chancellor, Provost or Dean of Faculty, HoD and Director, in any Nigerian university, a PhD degree is necessary. However, only a small portion of women compared to men have attained this

qualification as needed for the positions...therefore, not surprising that female participation in senior management...is limited due to the small number of qualified women” (p. 8). The authors also observed that when women are heading a department, the majority are “Acting Heads.” The authors observe other factors contributing to underrepresentation. One of them being religious influence, as most respondents were either Christian or Muslim—both religions that recognize men as heads and women as subordinates, a point similarly highlighted by other studies (e.g. Halkiyo et al., 2023; Karam & Afiouni, 2014). Additionally, the university system, reflecting the patriarchal Nigerian society, is also patriarchal. Other studies that attest to gender disparities in Nigerian HE, especially for early career academics, include Olaogun and Adebayo (2015) and Udegbe (2016). In African higher education at large, Liani et al. (2020) also explore the themes related to these disparities that emerge from the literature.

Mudavanhu and Batisai (2023) work reveal that the South African universities, much like American universities, remain racialized and gendered sites, even twenty years post-apartheid. Social media users are “just so sick and tired of hearing about quotas” (p. 45). They want merit hires and not diversity hires. They want faculty who are qualified, capable, skilled, and excellent. However, the authors, just like Slaton (2015), argue that by failing to problematize and question the notions of meritocracy and excellence, we—society, social media users—continue to equate whiteness and maleness to excellence, and blackness and femaleness to inferiority. And these biases have harmful psychological impacts on Black and female faculty, compelling them to perpetually prove that they are good enough and deserving (see also Mabokela & Mlambo, 2017; Naicker, 2013). Belluigi and Thondhlana (2019) findings reinforce the conclusions reached by Mudavanhu and Batisai (2023), particularly regarding the perspectives held in historically white South African universities. They find that the powers that be—the gatekeepers—believed it was

not possible to achieve both equality and quality at the same time, one had to be compromised. While Nigerian universities may not be racialized spaces, they are gendered, as (Owolabi et al., 2023) report. A staggering 95% of female graduate student respondents in construction programs indicated that they would not choose a career in academia due to gender profiling and threats, academic competency discrimination, demanding workplace conditions, inadequate institutional support for academic career success. Their findings suggest that even when race is not centerstage, Nigerian women still fear being perceived as inadequate, which affects their willingness to join and/or remain in higher education. Whether they are pursuing graduate degrees (as in the aforementioned study) or graduating with the same grades as their male counterparts (as is in Odunaike et al., 2011; Olubor, 2006), they are still perceived incompetent regardless.

In response to the challenges posed by prejudices, administrative duties, family responsibilities, and childcare, Moodly and Toni (2017) propose a framework, from an institutional policy and cultural perspective, to support female faculty—at all career stages—to access HE leadership. This framework includes mentoring, career development plan, professional and peer support, and networking. Likewise, Tarimo and Swai (2024) identify additional factors that facilitate the career advancement of women academics in Tanzania. These included self-motivation, support and influence from family and role models, scholarships for studying at home or abroad, and a desire to challenge societal and cultural beliefs about women's abilities. Chitsamatanga and Rembe (2019) arrive at the same conclusions. One the participants in their study shared: “We need to be confident in ourselves and show commitment to our work, if we are to grow, even at societal level, we need to believe in ourselves and prove that being a working mother does not mean that you cannot develop your career and look after your family as well” (pp. 80-81). The authors also suggest that family and spousal support was key to the career

advancement of female faculty—especially when they have to “go and study abroad” or “employ someone to assist bringing up [their] own children” (p. 81)—a finding similarly noted by the Nigerian scholar, Ekine (2018). These (South African and Zimbabwean) women participants, like other African female faculty, juggle many responsibilities and find it difficult to make time to publish articles, even when they have completed the research and gathered data. “Publication, publication, publication..... I am sitting on a lot of data which needs to be published but because of teaching and administration it’s hard to do that” (p. 83), another participant shared.

Mabokela (2002) in her work brings attention to the numerous problems junior female faculty face in research and knowledge production. One participant aptly shared: “We have a very poorly stocked library and our interlibrary loan department is not up to scratch at all. It is very slow and sometimes you never receive the material you request...We are geographically isolated and far away from other institutions. So, we do not have access to a community of other scholars [with whom] to engage in scholarly activities. Also, our infrastructure is very poor. We spend too much time getting small things done...All of these factors contribute to our lack of performance in research” (pp. 193-194). The author also finds that when these women seek mentorship or guidance from senior colleagues with more research experience, these senior faculty hesitate to “share their knowledge” (p. 194). This reluctance, mostly from male faculty, stems from a fear that doing so threatens the advantage they have over the women or, worse, reveal their incompetencies to do research. Speaking of research (or the lack thereof), Mlambo and Mabokela, (2017) offer an insightful explanation for the underrepresentation of female engineering faculty at senior ranks in a South African university: female faculty value the appreciate and enjoy the flexibility academia provides, and often remain in academia primarily for this benefit. As a result, they tend to prioritize other aspects of their lives over some of their academic responsibilities, which unintentionally leads

to falling short of the research and publication requirements needed for promotion, because they may not feel the pressure to do so.

This section shows that African women's academic careers are shaped not only by climate and evaluation, but by the material conditions of knowledge production—research infrastructure, scholarly access, and uneven institutional support. To move beyond broad regional proxies, this review hopes to turn attention to the Nigeria-specific gap and the qualitative trajectory required to understand how researcher identities are negotiated within Nigerian engineering departments.

Conclusion

Across the literature reviewed, women's underrepresentation in STEM academia is consistently tied to institutional conditions rather than individual shortcomings. Globally, women faculty encounter recurring barriers—unequal service loads, chilly climates, biased evaluation and promotion processes, and constrained access to networks and research opportunities—each limiting time, visibility, and advancement. Work centered on women of color shows how these dynamics compound through intensified scrutiny, invisibility, and identity taxation. African scholarship further highlights how patriarchal institutional cultures, gendered expectations, and uneven research infrastructure reshape the very possibilities for academic work and research productivity.

Despite these robust bodies of work, Nigerian female engineering faculty remain largely uncentered in the peer-reviewed literature, limiting what can be claimed about how researcher identities are negotiated in Nigerian engineering departments. The next step, then, is not to rehearse the list of barriers once more, but to center Nigerian female engineering faculty narratives to examine how institutional conditions shape not only career progression, but the everyday

production, recognition, and meaning of being a “researcher” in engineering academia. This is necessary for understanding how researcher identities are constructed under conditions that are simultaneously gendered, institutional, and locally situated—with implications for engineering education, faculty development, and the production of knowledge itself.

Mahabeer et al. (2018) find that at the start of their academic career journeys, African female faculty are often told about the privilege, a “wonderful opportunity” with “future prospects” they have. Yet their “joy is [soon] short-lived when the reality of the job [kicks] in” (p. 34). Examining why that is—specifically within Nigerian engineering academia—is the task this paper motivates.

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