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Building Inclusive Tech Ecosystems: The Impact of DEI and Belonging on Nigeria's Innovative Startups

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ABSTRACT: Nigeria's tech startup ecosystem is one of Africa's most dynamic innovation clusters. However, persistent challenges around diversity, equity, inclusion (DEI) and employees' sense of belonging persist and may potentially limit innovation, talent retention, and scalable growth. This paper reviews literature and policy context for DEI and belonging in Nigeria's technology sector. Furthermore, it synthesizes evidence linking inclusion to innovation, outlines an empirical research design for measuring the impact of DEI and belonging on startup performance in Nigeria, and offers actionable recommendations for founders, investors, and policymakers.

KEYWORDS: Tech Ecosystem, Startup, Innovation, Core Diversity, Equity, Inclusion (DEI), Belonging, Organizational Performance

I. INTRODUCTION

Nigeria hosts one of Africa's "largest and fastest-growing tech ecosystems", anchored by significant hubs and startups in Lagos, Abuja, Port Harcourt and other cities. This highly competitive environment has successfully produced widely adopted solutions, substantial local and international investment across strategic economic sectors, including Fintech, Healthtech, Agritech, and Edtech.

However, the Nigeria's tech ecosystem is heavily Lagos-centric, with underserved regions (especially Northern and rural areas) lagging far behind. Unique obstacles in Northern Nigeria includes scarce resources, poor infrastructure and very low female participation.

Although Nigeria's ICT sector has grown rapidly (e.g., contributing 18.4% of the GDP in Q2 2022), diversity is still very low. This growth is significant when compared to the fact that ICT contributed less than 1% to Nigeria's GDP in 2001.

However, despite the rapid growth of the country's tech sector, only very few women can participate as the ecosystem is largely dominated by men. The WEF Global Gender Gap Report 2025 saw Nigeria ranked 124th out of 146 countries.

Data from research by ONE Campaign and the Center for Global Development showed that only about 30% of 93 surveyed technology companies in Nigeria are owned by women, and more than one-third of these companies employed no women at all.

Another challenge extends beyond gender as it involves instance of persons with disabilities being often overlooked. Nigerian hubs train youth but nothing is being done to include disabled people.

The sector also faces several structural obstacles that influence market participation and the ability of organizations to "harness diverse perspectives for innovation". These constraints include "uneven access to capital, infrastructure challenges, and talent pipeline issues", influence who participates in the ecosystem and how organizations harness diverse perspectives for innovation. Addressing the internal dynamics of DEI and belonging is critical to maximizing the return on investment and ensuring the long-term viability and "scalable growth" of these innovative companies.

The National Information Technology Development Agency (NITDA) and the Federal Ministry of Women Affairs (FMWA) launched the National Gender Digital Inclusion Strategy (NGDIS) at the UN's 69th Commission on the Status of Women (CSW69). This strategy aims to bridge the gender digital divide by enhancing digital literacy and skills for Nigerian women, improving access to digital infrastructure, and promoting gender-responsive policies for online safety and economic empowerment. The initiative is a component of Nigeria's Renewed Hope Agenda and supports the Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

2. LITERATURE REVIEW

Global research establishes a link between diversity, equity, and inclusion and improved organizational performance. This link is particularly robust when management practices ensure that employees experience a "sense of belonging".

I. COMPARATIVE CONTEXT

i. Africa: African tech startups remain predominantly male-led, with only 17.3% having at least one female co-founder (up from 14.6% in 2023) and just 11.1% led by a female CEO. There are signs of gradual progress in some countries – for instance, Zambia now tops the continent with 24% of startups having a female founder, and Nigeria is around 21% – but women still face an outsized gap in leadership. Even in Nigeria's broader tech sector, women occupy only about 20% of C-suite tech positions among publicly listed technology companies, underscoring the persistent gender imbalance despite recent gains.

ii. Latin America: By contrast, Latin America's tech startup ecosystem exhibits more gender-inclusive leadership. A recent survey found 60.4% of Latin American startups have at least one woman on the executive team, and almost half (48%) report that women comprise 40% or more of their workforce. In other words, nearly half of startups in the region boast a female-majority workforce – far higher than the female representation in Nigerian tech startups. This contrast underscores that other regions have achieved more gender-diverse leadership, suggesting potential lessons for Nigeria's efforts to close its own gender gap in tech.

iii. Asia: India- In Asia, challenges persist in major markets like India. As of 2021, startups founded by women accounted for only 0.3% of total venture capital funding in India, and women-led businesses face an estimated $11.4 billion credit gap in financing. Nonetheless, targeted support programs are emerging. For example, the Women Startup Programme (WSP) at IIM Bangalore has trained thousands of female entrepreneurs in business skills (such as how to pitch to investors), helping many secure investments for their ventures. This kind of intervention has begun to chip away at funding barriers for women founders in India.

Southeast Asia: Meanwhile, in Southeast Asia, a new initiative aims to boost women-led ventures in the climate-tech sector. In 2025 the International Finance Corporation (IFC), in partnership with New Energy Nexus (NEX), launched the "She Wins Climate" accelerator – selecting 26 women-led climate startups across ASEAN countries for a fast-track investment-readiness program. The accelerator provides mentorship, investor networking and peer learning to help these entrepreneurs overcome funding barriers and scale their businesses. This example highlights how targeted regional programs can address the specific challenges (like funding access) that women founders face, paralleling similar barriers observed in Nigeria.

II. IMPORTANCE OF DIVERSITY AND INCLUSION

Extensive research shows that diversity and inclusion (DEI) are not just social ideals but strategic assets for innovation and performance. Globally, organizations with higher gender and ethnic diversity tend to outperform less diverse peers and achieve better outcomes. For instance, one study found that companies with diverse management teams have significantly higher profitability and 19% higher revenue from innovation on average. In practice, diverse teams bring varied perspectives and produce more innovative solutions than homogenous teams. This global evidence reinforces why inclusion matters: empowering women in tech isn't only about equity, it can directly drive creativity, problem-solving and business success – a crucial insight for Nigeria's tech sector as it strives for growth.

III. GLOBAL BEST PRACTICES

Around the world, several initiatives offer models for improving gender diversity in tech. For example, nonprofit Ingressive for Good launched a "1000 Women in Design" scholarship program in 2021, funding training for 1,000 women across Africa in digital design skills. Such efforts help build the pipeline of female tech talent. Likewise, the launch of FirstCheck Africa – an Africa-focused angel fund and venture firm dedicated to backing women-founded startups – is opening up early-stage funding specifically for female entrepreneurs. These kinds of targeted scholarships, accelerators and female-focused investors are supporting women founders and can serve as inspiration for policies and programs in Nigeria. Adopting similar "women-centered" initiatives could help bridge funding gaps and support the next generation of female tech leaders.

Diverse teams are found to be more innovative, provided that "inclusive leadership practices foster psychological safety". In Africa and Nigeria, DEI efforts are gaining attention, but challenges persist, notably in representation, gender equity, and addressing "funding disparities".

Table 1: Study Hypotheses

Hypothesis	Statement	Professional Implication
H1	Startups with inclusive HR practices report higher levels of employee belonging.	**HR Strategy:** Formalized professional practices drive talent engagement
H2	Higher belonging mediates the relationship between DEI and innovation outcomes.	**Business Performance:** Belonging is a critical level for generating innovative outputs.

H3	Belonging's impact on innovation is stronger under external constraints.	**Market Resilience:** Inclusion provides a competitive advantage in challenging operational environments.

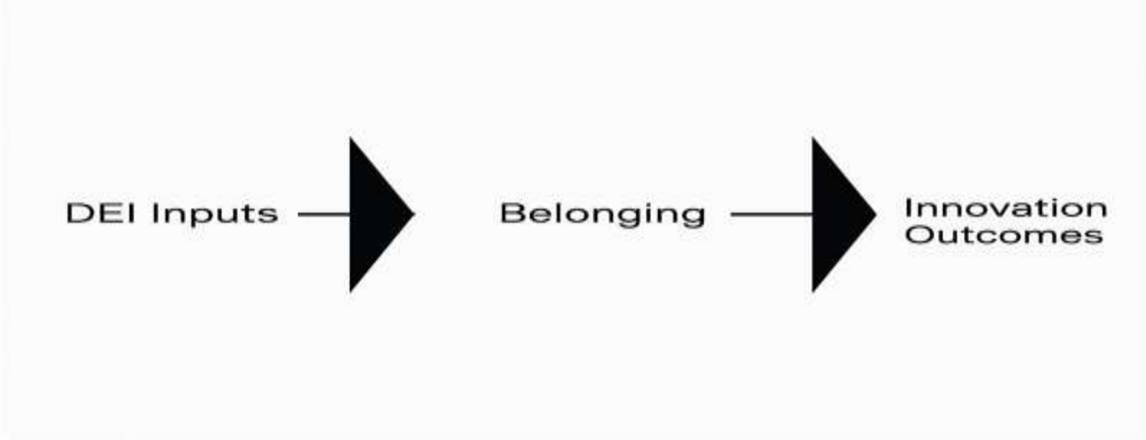

Figure 1: Conceptual model showing the DEI–Belonging–Innovation relationship.

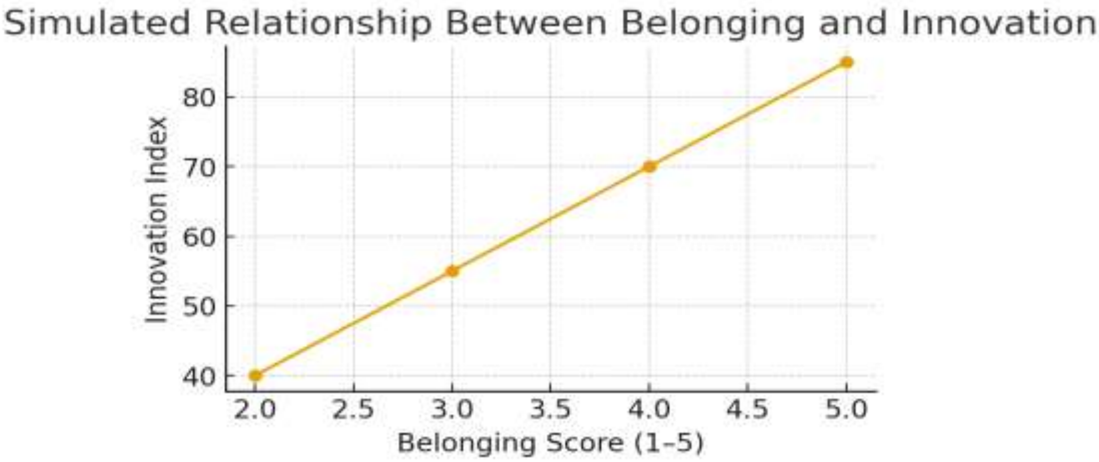

Figure 2: Chart illustrating the positive relationship between belonging and innovation.

3. METHODOLOGY

To provide measurable data on the professional efficacy of DEI efforts, a mixed-methods approach combining standardized surveys, structured interviews, and case studies will be employed. The study will analyse stratified samples of Nigerian startups in key economic hubs (Lagos, Abuja, and Port Harcourt).

Key performance variables measured will include objective **DEI inputs**, employee **belonging scores**, and tangible **innovation outcomes**. Data will be analysed using structural equation modelling for quantitative performance assessment, complemented by thematic coding for qualitative insights.

4. RECOMMENDATIONS

To capitalize on the professional opportunity presented by fostering inclusive ecosystems, the following actionable recommendations are directed within the ecosystem:

1. Founders and HR Leaders (Internal Strategy): Management must formalize inclusive hiring and evaluation practices and transform belonging into a measurable output by making it an explicit management KPI (Key Performance Indicator).
2. Venture Capitalists and Investors (Financial Due Diligence): Investment firms should actively encourage DEI due diligence as a standard component of their funding processes, recognizing that DEI metrics impact future performance and mitigate risk.
3. Mentorship and Talent Development (Pipeline Investment): Startups and ecosystem partners must invest in dedicated mentorship and sponsorship programs specifically designed for diverse talent.
4. Policymakers and Hub Operators (Ecosystem Governance): Entities responsible for the wider ecosystem must develop hub-level diversity programs and equitable access initiatives to address the "uneven access to capital" and ensure inclusion across the sector.
5. Gender Equity: Support female-focused accelerators and funds. Encourage initiatives which explicitly invest in women entrepreneurs. For example, FirstCheck – a female-led angel fund – provides "first checks" of ~$25K to African women with tech

startup ideas, helping them raise pre-seed rounds. Public investment vehicles (e.g. via the National Developmental Pensions Investment Fund or CBN programs) could similarly allocate a dedicated share of funding for women-led tech SMEs.

Expand scholarships and training. Scale up programs that boost women's skills in tech and STEM. Nigeria's NITDA IgniteHer bootcamp is one model: a five-day intensive training for 90 women entrepreneurs covering digital skills, business planning, and mentorship. Likewise, MTN Foundation's scholarships have invested over ₦3 billion in STEM education (awarding ~14,700 scholarships). The government and donors should increase such grants, fellowships and coding bootcamps targeted at women and girls.

Mentorship networks. Fund and partner with organizations like TechHer, WomenTechsters, etc to connect early-stage women with role models and peer groups. Formal mentorship and "women's networks" help sustain participation and retention.

Inclusive hiring practices. Encourage companies to adopt blind recruitment and set representation targets (e.g. 30–50% women in C-level roles). Promote transparency by requiring startups to track and report gender-disaggregated hiring and leadership data.

6. Regional Inclusion: Incentivize startups outside Lagos. Offer tax breaks, grants or subsidized rates for tech companies headquartered in underrepresented states (e.g. Kano, Kaduna, Sokoto, Calabar, Port Harcourt). This could parallel existing SME incentives but focus on non-Lagos ventures.

Strengthen state and local hubs. Support regional innovation centers and incubators. For example, Startup Kano – launched in 2016 – has become "one of the biggest in the northern region", serving as an entry point for over 50,000 youth and helping early-stage founders raise over $1 million. Funding similar hubs or creating new ones (e.g. in Sokoto, Port Harcourt, Calabar) could reproduce this success. Kano's experience shows that tailored local support can drive growth: over 2021–2024 Kano's tech startups grew from about 5 to 60.

Northern-focused programs. Launch coding academies, hackathons, and outreach programs specifically in the North. For instance, USAID's Tech4Families project in Kano worked with households and communities to address social norms around women's tech use. Similar "bridge" campaigns can engage parents and local leaders, making tech entrepreneurship culturally acceptable for women and men alike.

University partnerships. Collaborate with northern universities and polytechnics to integrate entrepreneurship into curricula (bootcamps, startup projects). This builds an early funnel of innovators outside Lagos.

7. Access to Capital: **Women's Tech Fund**. Create a dedicated financing facility (e.g. using part of the announced $180 million fund) that provides grants or low-interest loans to women- and Northern-based founders. For instance, a partnership between the Development Bank of Nigeria and commercial banks could underwrite a "Women Empowerment Fund" (as Sterling Bank did with a ₦20 billion facility, offering up to ₦75 million per women-led business).

Relax collateral requirements. Encourage banks to offer loans on alternative credit models. We-Fi/IFC supported an Access Bank pilot in Nigeria where loan decisions used cash-flow data instead of traditional collateral, addressing the fact that many women lack title deeds. Scale such products via CBN credit-guarantee schemes or by rewarding banks (through the We-Fi Finance Code principles) for lending to women without physical collateral.

Tie DEI to funding criteria. Make diversity and inclusion a condition for receiving public or donor funding. For example, require startups applying for grants or co-investments to submit DEI action plans, report gender composition, or demonstrate outreach to underserved groups. This creates an incentive to include women and minority founders from the outset.

Leverage international programs. Partner with multilateral initiatives: for example, the IFC and We-Fi invested in TIDE Africa (a VC fund) to ensure it allocates at least 10% of its investments to women-led tech startups and provides mentorship to female founders. Similar collaborations could bring in global capital; Nigeria could encourage local funds to sign on to the We-Fi Finance Code, which commits financial institutions to increase lending to women entrepreneurs.

8. Policy and Regulatory Measures: Startup Act reforms. Amend the Nigeria Startup Act to include inclusion metrics. For example, tie eligibility for tax breaks or innovation grants to a startup's DEI policies. The upcoming Startup Act refresh (2022) is an opportunity to mandate that incentive applicants report staff gender breakdowns or anti-discrimination codes of practice. Notably, Nigeria's new NGDIS explicitly suggests using the Startup Act to support female founders – this could be formalized.

Expand Affirmative Action to tech. Nigeria's federal 35% Affirmative Action policy (for public sector jobs) could be extended to tech funding programs. For instance, require that at least a third of recipients of public grants or innovation contracts be women-led or from underrepresented regions. This leverages existing policy principles to the startup world.

Align with NGDIS goals. The National Gender Digital Inclusion Strategy (NGDIS, 2024–27) sets benchmarks like "at least 40% female participation in all national training programs". Federal and state ICT agencies should adopt NGDIS targets in their initiatives (e.g. requiring hubs or coding academies to hit 40% women trainees). Policymakers can integrate NGDIS pillars into ICT policies across ministries.

DEI Code of Practice. Advocate a nationwide DEI code – inspired by the Women Entrepreneurs Finance Initiative – that commits corporations to gender-lens practices. For example, following the global WE Finance Code, Nigerian banks and VC firms could publicly pledge actions (leadership roles, data reporting, targets) to boost women's finance. Regulators (SEC, CBN, BPE) could issue guidelines for private companies to adopt such codes.

The table below illustrates how current policies can be leveraged or revised for inclusion:

Table 2: Framework

Framework	Inclusion Focus
NGDIS (2024–27)	Targets "≥40% female participation" in all digital skills programs; mandates support for women in tech (Startup Act link).
Startup Act (2022)	Incentivizes tech startups via tax breaks and funding; can be retooled to require DEI compliance (as NGDIS envisions for female-led startups).
NITDA Programs	Agency initiatives like the IgniteHer Bootcamp (women-only tech training) and other gender-lens ICT programs. Future NITDA guidelines can embed mandatory inclusion standards.
Affirmative Action	Existing 35% quota for women in government hiring; propose extending to public grants and tech awards (e.g. minimum % of grants to female-led ventures).

Cultural Change and Advocacy

Public awareness campaigns. Launch media and PR campaigns featuring successful Nigerian women in tech (founders, engineers, investors) to challenge stereotypes. Stories of companies like Risevest and Selar, which intentionally maintain balanced gender representation in hiring and leadership, can be highlighted as models. Government and NGOs could fund documentaries, radio segments or social-media series on women entrepreneurs.

Unconscious bias training. Encourage tech companies and hubs to conduct mandatory diversity and inclusivity training. Simple measures like not asking about gender or background during hiring (as Risevest practices) reduce bias. Support workshops and toolkits for HR leaders on "de-biasing" recruitment and promotion.

Engage communities. Work with local women's groups, youth leaders and faith organizations to shift norms. USAID's guidance notes that high male disapproval often blocks women's tech use. Programs like Tech4Families showed how engaging families and gatekeepers (through radio and community dialogues) can change attitudes toward girls using technology. Similar grassroots outreach should accompany policy efforts.

Celebrate role models. Regularly profile and award women founders. For example, partnership with tech conferences to give prizes to women-led startups, or national "Women in Tech" awards backed by government and industry. Visible recognition reinforces the message that women belong in tech.

By combining these measures – from financing and regulation to mentorship and culture – Nigeria can make its startup ecosystem more inclusive. Citing best practices and data (e.g. the fact that only 0.7% of startup funding went to women-led ventures) helps justify concrete targets. Ultimately, sustained progress will require both top-down policies (like DEI requirements in law) and bottom-up shifts (awareness and networks) to ensure no talented Nigerian innovator is left on the sidelines.

5. CONCLUSION

In summary, fostering greater inclusivity within Nigeria's tech ecosystem is not solely a social aspiration but a strategic requirement that can unlock enhanced innovation, competitive advantage, and national business growth.

Research indicates that diversity, equity, and inclusion (DEI) significantly contribute to organizational innovation and performance, largely by cultivating employees' sense of belonging. Organisations with higher gender and ethnic diversity report increased profitability and innovation revenue, highlighting considerable potential for Nigeria's technology sector.

Nevertheless, the industry continues to exhibit a pronounced gender imbalance and funding disparity: only 17.3% of African startups feature a female co-founder, while women occupy approximately 20% of senior technology roles within Nigerian public tech firms—substantially lower than in regions such as Latin America. The limited access to funding for women-led ventures in Nigeria reflects broader global trends.

Sustaining growth in Nigeria's technology sector will require deliberate efforts to address this gender gap. The evidence underscores the need for measures such as inclusive human resources practices, initiatives to foster a culture of belonging, and both financial and regulatory reforms.

Recommended strategies include:

- Mandating DEI due diligence for investors,
- Expanding female-focused accelerator programs, dedicated funds, and scholarship opportunities,
- Amending legislation, such as the Startup Act (2022), to mandate DEI compliance and broaden affirmative action policies.

Ultimately, advancing inclusivity within Nigeria's technology ecosystem is a strategic imperative for driving innovation and long-term business success nationwide.

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