Information Frictions and Gender Inequality in Online Labor Markets

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Evidence from Nigeria shows reducing information frictions in online labor markets can lower gender gaps in employment

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Topic at a Glance

Online labor markets have proliferated globally raising hopes that easier, less costly access to information and communication technology (ICT) and greater information transparency could reduce gender inequality in employment. Yet gender gaps in job applications and hiring persist even on digital platforms. This project investigates whether information frictions — misinformed beliefs among applicants and hiring managers and uncertainty about employer preferences — are key drivers of gender inequality using evidence
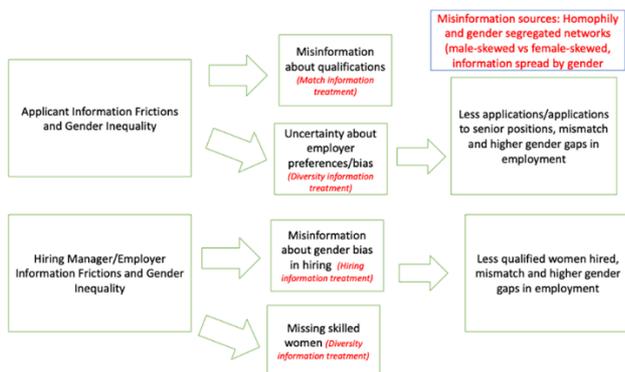

Figure 1: Conceptual Framework: Misinformation, Self-Beliefs and Homophily

from the largest online job platform in Nigeria. Using data spanning 2014–2020 with over 2 million applicant-job matches and 227,194 unique applicants, the research documents three core facts: women apply to lower-level jobs than equally qualified men; women apply to fewer jobs overall; and hiring managers are more likely to hire qualified men over equally qualified women. The project then tests whether low-cost information interventions on both sides of the market can change behavior and reduce gender gaps in matching and hiring outcomes.
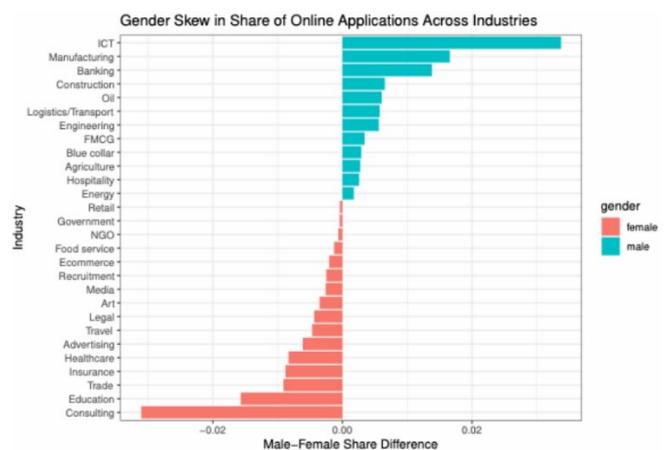

Figure 2: Gender skew in online applications by industry, 2014-2020

New Insights

Paper 1 — Shocking Offers: Gender, Wage Inequality and Recessions in Online Labor Markets

Using data from the largest online job portal in Nigeria, this paper documents that jobs in female-skewed industries offer lower starting salaries than male-skewed industries. During Nigeria's 2016 recession, the salary-offer gender gap almost entirely

disappeared — driven by a relative shift in applications across industries — demonstrating that gender wage gaps in online labor markets are sensitive to macroeconomic shocks and applicant behavior.

Paper 2 — Firm Culture: Hiring Discrimination in Online Labor Markets

Using a novel dataset of 194,190 unique applicants and over 1.3 million applicant-job matches (between 2016–2018) from the largest online job portal in Nigeria, this paper shows that social norms shape gender bias in hiring even in high information online environments. Co-ethnic male applicants are 15% more likely to be hired relative to the mean, while co-ethnic female applicants face a 10% reduction in hiring likelihood. The penalty is largest for women applying to senior roles, in client-facing industries, and when evaluated by less experienced hiring managers and hiring managers from more patriarchal groups. Crucially, providing hiring managers with information about the productivity benefits of diversity dampens this co-ethnic hiring bias and results in an increase in the ethnic diversity of qualified women that mangers choose to hire.

Paper 3 — Information Frictions and Gender Inequality in Online Labor Markets (Main Paper)

Two experiments on the largest online job platform in Nigeria tested the effects of information on both applicants and hiring managers:

•   Match information treatment: Female applicants who received data on gender matching patterns were more likely to express intent to apply for senior roles. Effects were especially strong for highly experienced women in male-skewed industries (+18 pp intent to apply vs. -13 pp in control). Long-run effects on actual applications to senior roles persisted up to 7 months post-treatment.

•   Diversity information treatment: Signaling employer commitment to diversity significantly increased actual applications from women to senior positions (+13 pp vs. -8 pp in control), particularly among women in male-skewed industries (+27 pp).

•   Hiring information treatment (hiring managers): Female hiring managers who received information on gender hiring patterns ranked qualified female candidates 27 pp higher for senior roles. Male hiring managers, however, ranked qualified women 13

pp lower — suggesting that misinformed female managers drove the positive updating effect.

Policy Recommendations

•   Scale low-cost information interventions on digital job platforms: Providing targeted information to job seekers about gender-based matching patterns and to employers about the productivity benefits of diverse hiring are cost-effective ways to reduce gender gaps. Governments and policy organizations should support platforms to embed such messaging as a standard feature.

•   Mandate or incentivize diversity signaling in job advertisements: Diversity statements in job ads significantly increase applications from women, particularly in male-dominated industries. Policymakers in Nigeria and across Africa should consider frameworks that encourage or require employers to signal openness to female applicants.

•   Target information interventions by gender of hiring managers: Training programs and information campaigns for hiring professionals should consider gender-differentiated approaches. Additionally, hiring more female hiring managers may help mitigate gender gaps in hiring.

•   Address social norms alongside information barriers: Information alone is insufficient when strong patriarchal social norms prevail. Complementary interventions — including functional, enforced, federal anti-employment discrimination laws, managerial training on unconscious bias and stakeholder engagement with community and business leaders — are needed to reduce hiring discrimination.

•   Invest in comprehensive labor market data in sub-Saharan Africa: The rich micro-level data from our implementation partner is exceptional for the region. Supporting online platforms and government agencies to collect and share similar data would enable more evidence-based policymaking as Africa's labor force is expected to double by 2050.

Limitations

The study's applicant sample is drawn from the Nigerian online platform's user base, which is highly educated (98% with tertiary education) and experienced (averaging 4.6 years of work experience). This differs substantially from the median job seeker

in Nigeria and in other developing country contexts, so the effects seen in the results may represent an upper-bound on effects for the average worker in this context.

While all experiments have been completed, the analysis of hiring outcomes up to one year post-treatment is still ongoing as of the time of this brief. Full long-run results on the effects of the hiring information treatment on actual gender gaps in employment are forthcoming, and early results — particularly the divergent effects by hiring manager gender — should be interpreted with caution until the complete analysis is available.

The context of Nigeria, with its highly multiethnic population and specific co-ethnic norm dynamics, may limit direct applicability to other countries, though the mechanisms identified (information frictions, social norms) are likely relevant across many labor markets in Africa and beyond.

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