

GENDER & EQUITY AND WOMEN*

Chair: Rohini Somanathan

Speakers: Kunal Sen, Bina Agarwal, Ravinder Kaur

Interactive
Session

5A

Date: 05th October 2025 | Time: 12:00 – 13:30 hrs

Addressing Gender Inequalities: Women's Economic Participation in India

Gender inequality in India manifests across multiple dimensions of economic and educational life, from the severe underrepresentation of women in elite STEM institutions to their limited participation in the formal labour force and unequal access to productive assets like land. Despite progress in women's educational attainment and some policy interventions, deep-rooted social norms, institutional biases, and structural barriers continue to constrain women's full economic participation and leadership. Addressing these inequalities is not merely a matter of social justice but is critical to India's economic growth and development potential.

This policy brief examines three interconnected dimensions of gender inequality in India: the persistent exclusion of women from faculty positions and leadership in elite STEM higher education; declining female labour force participation and the concentration of women in vulnerable, low-quality employment; and unequal access to landed property. Drawing on empirical evidence, we identify key insights and policy recommendations for policymakers.

The Missing Women Faculty Problem in Elite STEM Institutions

India's elite STEM institutions, particularly the Indian Institutes of Technology (IITs), have around 10-12% female faculty despite a growing percentage of women graduating with STEM doctorates. Since 2010, the percentage of female students graduating from PhD programs in STEM has increased substantially—from approximately 15% in engineering and technology to over 30% by 2023, and from around 30% to over 45% in sciences. Yet this growth in the pipeline has not translated into proportional representation in elite academia.

Female faculty representation in engineering departments at IITs has remained stagnant at around 10% since 2000. In science departments, mathematics departments account for around 20%, physics for approximately 12%, and chemistry shows the least representation at about 10%. Research on chemistry faculty reveals a striking pattern: women cluster in lower-ranked academic institutions. Figure 1 shows that the higher the NIRF rank of the institution, the lower the percentage of women faculty.

* Prepared by: Antra Madaan, Kanika Sehra, Simran (IES Officer's Trainee 2025 Batch)

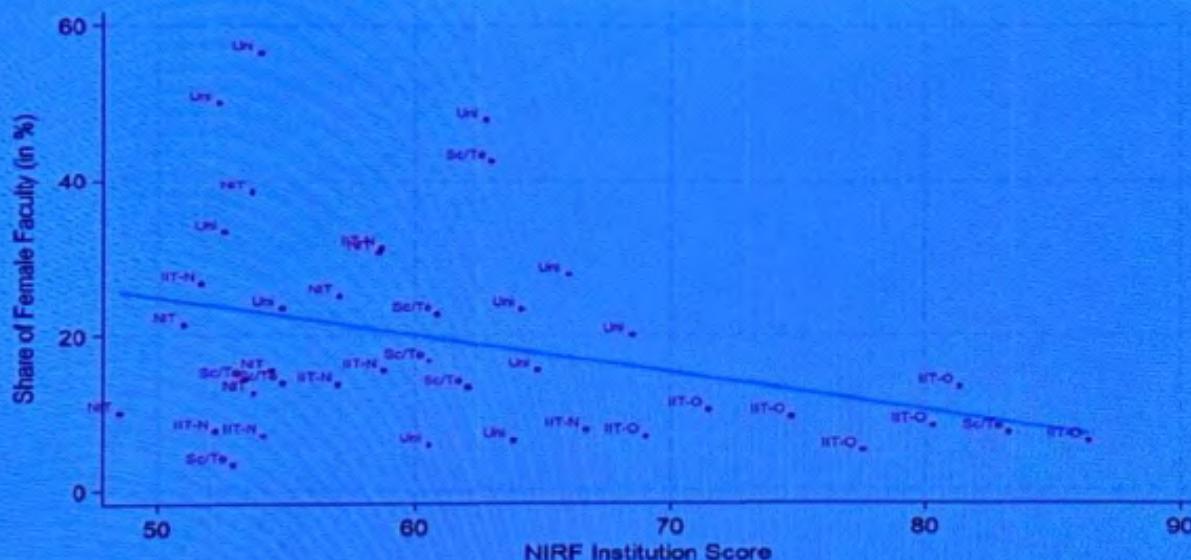


Figure 1: Slide presented @KEC.

Several institutional factors explain this "leaky pipeline." Historically male-dominated institutions have ingrained biases about women's STEM abilities, creating asymmetric standards where women "must be the best while mediocre men abound." Biased recruitment processes act as gatekeeping mechanisms. A chilly departmental climate, with fewer female supervisors and lack of role models, affects both the pipeline of aspiring female PhD students and retention of women faculty. Institutions lack "gender aware" policies that address the conflicting demands of career advancement timelines and socio-biological pressures. Resistance to hiring STEM couples in the same institute (the "two-body problem") further limits opportunities.

The Quantity and Quality Crisis in Women's Work

Gender disparities extend beyond education to the broader labour market. India's female labour force participation rate has deteriorated over recent decades, with India consistently ranking among the lowest in South Asia. Beyond the quantity of women's work, insufficient attention has been paid to the quality of women's employment. Women are more likely to be in vulnerable employment categories—own-account workers and contributing family workers who lack employment security and social protection.

Analysis of female-owned informal enterprises reveals that approximately 97% of female-owned firms are "own account enterprises" (single-person operations), accounting for 89% of female employment in this sector. Female

firms are predominantly home-based, limiting their growth potential. The main constraint on female-owned enterprises is lack of demand, followed by access to raw materials. These patterns reflect how gender norms confine women's economic activities to the domestic sphere, limiting their ability to scale operations and access markets.

increase national growth by 2.5-4%. When mothers own landed assets, outcomes improve significantly: better child nutrition, education, and health; lower risk of domestic violence; and enhanced decision-making power.

Yet globally, women landowners constitute only 14-16% of all landowners in developing

Female Firms Predominantly Based at Home

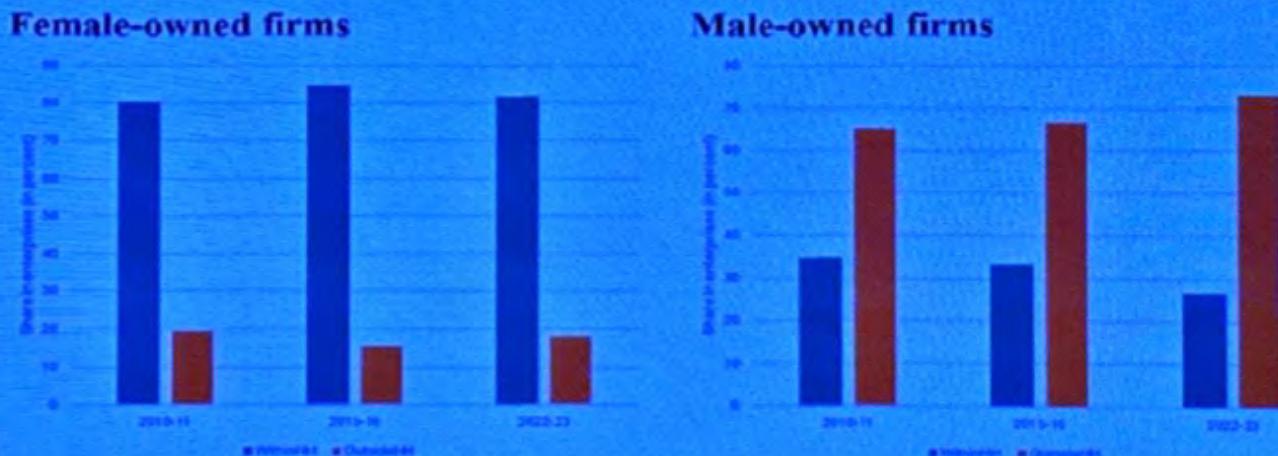


Figure 2 shows the number of firms owned by males and females within households (blue bar) and outside households (red bar). Slide presented rohini @KEC.

Gender Inequality in Property Ownership

Despite legal reforms granting women equal inheritance rights, gender inequality in property ownership remains stark. Landed property is central to economic security, empowerment, and welfare. The FAO estimated that reducing the gender gap in access to land and agricultural inputs could raise crop yields by 20-30% and

countries. In India, according to NFHS-5 (2019-21) data, regional variation exists but the gender gap remains high across all regions, with North and East India performing worst. This inequality persists due to social norms around marriage (fears that property will transfer outside the family through daughters), female seclusion norms that restrict women's ability to manage property, and social perceptions that women don't need landed property because "fathers/husbands will look after them."

Innovative Solutions: Group Farming

Alternative models for women's access to productive land have emerged. Group farming on leased land has shown particular promise in Kerala. The Kerala model, launched as Kudumbashree, involves all-women group farms where women lease land, pool labour and capital, cultivate jointly, and share costs and benefits. The program has grown to over 73,000 groups involving more than 300,000 women.

The economic returns are striking: annual value of output per hectare in group farms was 1.8 times that of individual family farms; net returns per farm in groups were 5 times those in individual farms; and some groups have used their profits to purchase land collectively. Beyond economic returns, group farming generates technical empowerment (acquisition of knowledge and exposure to new crops), social empowerment (building contacts with institutions and gaining community respect), political empowerment (members winning panchayat elections), and crisis resilience (87% of group farms survived economically during COVID-19 lockdowns while large numbers of individual farmers suffered losses).

The model has spread to Telangana, Tamil Nadu, West Bengal, Bihar, and Gujarat, with significant potential for further scaling given that females constitute 42% of Asia's agricultural labour.

Policy Recommendations

Reforming Elite STEM Institutions

Adopt gender-aware rather than gender-neutral

policies. Address biased recruitment processes and the "two-body problem" of hiring STEM couples. Increase female supervisors to provide role models for aspiring female PhD students.

Improving Women's Work Quality

Address demand constraints facing female-owned enterprises. Improve access to raw materials for female entrepreneurs. Support transition from home-based to market-connected enterprises.

Strengthening Women's Property Access

Challenge social norms and perceptions that discourage women's property claims. Scale up group farming models with land leasing support, startup grants, technical training, and subsidized credit. Create federations and alliances of group farms for greater market power.

Conclusion

Gender inequality in India is not merely a social justice issue but an economic imperative. The underutilization of women's potential in elite STEM institutions represents a significant waste of human capital. Low female labour force participation and concentration in vulnerable employment constrains economic growth. Unequal property rights limit agricultural productivity and welfare outcomes.

The evidence is clear: closing gender gaps would yield substantial economic returns while improving social welfare and achieving sustainable development goals. India's



INSTITUTE OF ECONOMIC GROWTH

KEC POLICY BRIEF

demographic dividend can only be fully realized if women's economic participation is enhanced both quantitatively and qualitatively. The solutions are within reach—reforming institutional practices in elite academia, supporting women's entrepreneurship with appropriate interventions,

and scaling innovative models like group farming. What is required is sustained political will, adequate resource allocation, and systematic implementation monitored through robust accountability mechanisms.



INSTITUTE OF ECONOMIC GROWTH

University of Delhi Enclave, (North Campus), Delhi- 110007, India

📞 +91-11-27667288/365/424/570/260 & 9810322376, 9810334376

Website: <https://iegindia.org/>



@iegresearch



in.linkedin.com/company/institute-of-economics-growth