

Exploring the Intersection of Gender, Technology, and Socioeconomic Empowerment

GENDER AND INCLUSION Conference 2025

Gender and Inclusion Conference 2025:

Exploring the Intersection
of Gender, Technology and
Socioeconomic Empowerment

PROCEEDINGS

CDPP CENTRE FOR
DEVELOPMENT
POLICY AND
PRACTICE


defindia
org


K KAUTILYA
SCHOOL OF
PUBLIC POLICY


**THE EDUCATION
GROUP
LONDON**


MAMUNA APAR NATIONAL
UNIVERSITY
CENTRE FOR WOMEN STUDIES


INTERNATIONAL INSTITUTE OF
INFORMATION TECHNOLOGY
HYDERABAD


JAHANGIRABAD
INSTITUTES OF TECHNOLOGY


CEEW
TIF COLLEGE

**Gender and Inclusion
Conference 2025:
Exploring the Intersection of
Gender, Technology and
Socioeconomic Empowerment**

Proceedings

Table of Contents

Foreword	
Introduction to the Conference Theme	1
Day 1: August 8, 2025. Venue: Kautilya School of Public Policy	
Introduction to the “Gender” Series of the Conference	3
Inaugural Address	4
Welcome Address	5
Keynote Address	6
Paper Presentations, Session 1: <i>Bridging the Digital Divide—Advancing Gender Equity and Social Empowerment Through Digital Tools</i>	8
DEF Technical Session: <i>Governing Digital Disability Inclusion—Lessons from the Samarth SoochnaPreneur Model for Women with Disabilities</i>	8
Paper Presentations, Session 2: <i>Technology and Economic Empowerment—Exploring Gendered Impacts of Emerging Innovations</i>	11
Paper Presentations, Session 3: <i>Policy, Governance, and Global Perspectives</i>	11
Special Talk: <i>Increasing Women’s Inclusion in the Labour Market: Aspirational or a Matter of Concern</i>	12
Special Address	14
Valedictory Address	15
Closing Remarks	16
Day 2: August 9, 2025. Venue: International Institute of Information Technology, Hyderabad (IIIT-H)	
About the Conference	18
Inaugural Address	19
Welcome Address	20
Keynote Address	21
Panel 1: <i>Bridging the Digital Divide—Advancing Gender Equity Through Social Empowerment Tools</i>	22
Panel 2: <i>Technology and Economic Empowerment—Exploring Gendered Impacts of Emerging Technologies</i>	26
CDPP Session: <i>Digital Health Publication with Focus on the Findings Related to Gender, Caste, and Class</i>	31
KSPW Workshop: <i>Emerging Technology, Inclusivity, and Regulation</i>	34
Panel 3: <i>Policy, Governance, and Global Perspectives</i>	39
DEF Technical Session: <i>Beyond the Binary—Rethinking the Gender Digital Divide</i>	43
Vote of Thanks	45
Abstracts of Papers	46
Speakers Profile	62
Speakers Essays	71

Foreword

“Technology is neither good nor bad; nor is it neutral.”

Melvin Kranzberg

In an age where algorithms influence opportunity and identity, the question is not whether technology transforms lives—but whose lives it transforms. The *Gender and Inclusion Conference 2025* sought to explore precisely this, reflecting on how digital innovation intersects with gender, caste, class, and disability to shape empowerment and exclusion in contemporary India.

Organised by the Centre for Development Policy and Practice (CDPP) in collaboration with the Kautilya School of Public Policy (KSPP), Centre for Women Studies at Maulana Azad National Urdu University (MANUU), Digital Empowerment Foundation (DEF), and The Education Group (TEG), London, with associate partners Council on Energy, Environment and Water (CEEW), Jahangirabad Institute of Technology (JIT), and International Institute of Information Technology, Hyderabad (IIIT-H), the conference brought together scholars, policymakers, and practitioners committed to advancing inclusive development.

Day 1 featured rigorous scholarly work from researchers across India who examined the gendered dimensions of technology—its power to enable, its potential to exclude, and the policy frameworks needed to bridge these divides. Their papers, spanning digital labour, access, entrepreneurship, and social empowerment, reflect a growing body of evidence-based research that anchors this volume.

Day 2 expanded these discussions, bringing together practitioners, academics, and experts who shared grounded experiences from the field. From community-led models of digital inclusion to gender-responsive governance and emerging policy frameworks, these conversations underscored the transformative possibilities of technology when informed by empathy and equity.

What resonated throughout the two days was a shared understanding—technology is only as inclusive as the systems that design and govern it. True empowerment requires not just access, but agency, safety, and representation.

These proceedings capture the intellectual depth and collaborative spirit that defined the conference. As we collectively shape our digital future, may this work inspire continued inquiry and action towards building technologies—and societies—that are equitable, participatory, and just.

Anjana Divakar

Executive Director

Centre for Development Policy and Practice

Introduction to the Gender and Inclusion Conference 2025: Exploring the Intersection of Gender, Technology and Socioeconomic Empowerment

Centre for Development Policy and Practice

The Centre for Development Policy and Practice (CDPP) in collaboration with Kautilya School of Public Policy (KSPP), Centre for Women Studies under Maulana Azad National Urdu University (MANUU), The Education Group (TEG)(London), and Digital Empowerment Foundation (DEF), and associate partners, Council on Energy, Environment and Water (CEEW), Jahangirabad Institute of Technology (JIT), and International Institute of Information Technology, Hyderabad (IIIT-H), hosted the Gender and Inclusion Conference in Hyderabad on August 8 & 9, 2025.

This year's theme focused on "Exploring the Intersection of Gender, Technology and Socioeconomic Empowerment." The event brought together scholars, practitioners, policymakers, and civil society leaders to reflect on how rapid technological change is reshaping lives and opportunities, while also reproducing new forms of exclusion. With digital technologies increasingly embedded in governance, markets, and everyday life, the conference underscored the urgent need for inclusive policies that address the compounded vulnerabilities of gender, caste, class, religion, and disability.

Over the course of the conference on the first day, paper presentations and technical sessions examined the barriers to digital access for marginalised groups, the gendered impact of emerging innovations, and strategies to make digital economies equitable. Discussions explored how digital tools can be harnessed for education, economic independence, and social advocacy, while highlighting the risks of algorithmic bias, unequal access, and policy blind spots. A special focus was placed on the role of community-driven models, inclusive governance, and global frameworks in advancing gender-responsive digital futures.

The second day featured three panels addressing digital equity, technology and economic empowerment, and policy and global perspectives. Alongside these, technical sessions by DEF showcased grassroots innovations like the Samarth SoochnaPreneur model for women with disabilities, and conversations on structural exclusions faced by transgender and gender-diverse communities. The conference also included a workshop by Prof. Vishnu Pillai on "Emerging Technology, Inclusivity, and Regulation," which encouraged participants to critically engage with the challenges of AI and fast-paced digital transformations.

Through these discussions and exchange, the Gender and Inclusion Conference 2025 reaffirmed that technology can only become a true enabler of empowerment when it is accompanied by justice, inclusivity, and representation. The conference served as a call to policymakers, practitioners, and academics alike to shape digital futures that are equitable, participatory, and just.

Day 1:

August 8, 2025

Venue:

*Kautilya School of Public
Policy*

Day 1: August 8, 2025

Venue: Kautilya School of Public Policy

Introduction to the "Gender" Series of the Conference

Manisha Dhulipala

Senior Research Fellow

Centre for Development Policy and Practice

Ms. Manisha Dhulipala opened the inaugural session by welcoming participants on behalf of CDPP and all conference organisers. She reaffirmed CDPP's longstanding commitment to addressing development issues where gender is an inseparable component.

Reflecting on past initiatives, she referenced the previous conference's focus on women in the workforce, particularly a case study of an organisation in Mumbai dedicated to building safer spaces for women from marginalised identities.

She then introduced this year's thematic emphasis on digital inclusion, posing critical questions about who remains excluded from digital spaces and the structural reasons behind such exclusion. Her remarks underscored the need to approach digital access not only as a technological issue but also as a gendered and socioeconomic one.

Ms. Dhulipala stressed the urgency of confronting violence against women and dismantling systemic inequalities, both within digital environments and the wider development context, to ensure equitable participation for all.

Inaugural Address

Osama Manzar

Founder-Director

Digital Empowerment Foundation (DEF)

Mr. Osama Manzar opened the conference by addressing the persistent gender gap in digital inclusion, noting that disparities are present across every sector in India. He highlighted that while women play a significant role in governance, agriculture, crafts, and education, they remain systematically excluded from digital tools and platforms that could enhance their participation and livelihoods. The address framed digital inclusion not only as a technological challenge but also as a matter of gender equity and policy reform.

India elects approximately 3 million panchayat members, with women comprising half. However, many remain excluded from both governance processes and digital participation. Of 200 million artisans, 72% are women, yet most are digitally excluded. Similarly, among 68 million handicraft workers, 38% are women without adequate access to technology. Across 9 million SHGs with around 100 million women members, digital connectivity remains low. While India has 118.7 million cultivators and women represent a significant share (42% in agriculture), they face greater barriers to digital access than men. Out of 9.5 million government schoolteachers, only 4.8% are women, reflecting broader structural inequalities.

The absence of targeted policies for women in agriculture, education, and artisan sectors perpetuates patriarchal systems. Women in health services also face digital exclusion, limiting their efficiency and reach in service delivery.

DEF's "Soochnapreneur" project demonstrated that when women act as both users and providers of technology, benefits extend across entire communities. Women tend to adopt technology more inclusively and use resources more efficiently, particularly at the grassroots level.

Mr. Manzar also advocated for making technology more "feministic" by addressing women's specific needs through subsidised phones, affordable network access, and women-led fact checking, along with emphasising that women at the bottom of the economic pyramid often achieve higher impact with fewer resources, underscoring the importance of designing policy interventions with empathy.

Mr. Manzar closed his remarks by reframing the challenge as a question of policy reform: "How do we tweak the policy?" He stressed that achieving gender equitable digital inclusion requires deliberate, empathetic policymaking, targeted subsidies, and a recognition that empowering women digitally leads to wider community empowerment.

Welcome Address

Ambassador Syed Akbaruddin

Dean, Kautilya School of Public Policy (KSPP)

Opening the conference, Ambassador Syed Akbaruddin extended a warm welcome to participants, acknowledging CDPP and other partners for their collaborative efforts toward advancing gender equity. He expressed gratitude to Kautilya colleagues for fostering a safe and inclusive environment, noting that in just five years the institution has progressed in terms of having more than 50% female students.

Describing inclusion as a “wicked problem,” he emphasised that achieving equity requires a broad and nuanced understanding of social realities. He shared the story of Sunitha, an 18-year-old from Rudraram who, despite lacking a smartphone of her own, uses her younger brother’s device to sell pickles via WhatsApp and create Instagram reels. However, he highlighted Sunitha’s case as an exception; in the same village, one in three women have never used the internet.

Across India, approximately 250 million women remain without internet access, with women’s access to digital tools being consistently 15% lower than men’s. Approximately, women are 30% less likely than men to use internet through mobile phone. The challenge is not merely about owning gadgets but ensuring equitable opportunities for access, as education, employment, and public services increasingly move online. Closing the gender digital divide by 2030, in line with the Sustainable Development Goals (SDGs), could add USD 1.3 trillion to India’s GDP making it not just a social imperative but an economic one.

Technology reflects and carries social, political and economic challenges, making it one of the most challenging domains to manage equitably. Gender is not binary, and transgender and non-binary people face heightened risks of exclusion. Current digital ID systems, which limit recognition to “male” or “female,” create barriers to access.

The speaker called for greater investment in skilling transgender individuals to tell their stories and build sustainable livelihoods, and framed digital access as essential infrastructure rather than an act of charity. Ambassador Akbaruddin also advocated for embedding digital literacy into public life by using platforms like Zoom to ensure that digital tools are linguistically inclusive and culturally sensitive.

While referencing the UN’s HeForShe initiative, he noted that personal stories often have greater impact than statistics in shifting perceptions and inspiring action; he thus urged participants to view digital access not just as a matter of connecting devices, but as a means of connecting people to justice, dignity, and ambition.

Ambassador Akbaruddin concluded by expressing hope that the conference would meaningfully contribute to bridging the gender digital divide, and that future editions would continue to grow in scale and impact.

Keynote Address

N. Bhavani Sri (IAS)

Secretary

National Turmeric Board (NTB)

In her keynote address, Ms. N. Bhavani Sri drew from her diverse career trajectory spanning policy formulation, social development work, and leadership roles to highlight the complex intersections of gender, inclusion, and digital access. Reflecting on personal experiences from her journey into the Indian Administrative Service (IAS) and subsequent postings, she addressed persistent structural barriers facing women, particularly in rural and agricultural contexts, and the need for policy frameworks that actively enable equitable participation.

Recounting her own IAS preparation, she noted that it took 4–5 years to clear the exam, but societal pressures particularly marriage expectations often limit women to two or three attempts. She emphasised how patrilineal norms, caregiving responsibilities, and career dropouts due to child-rearing continue to undermine women’s representation in leadership roles.

Posting in the Northeast initially raised questions about whether women officers would serve there; improved infrastructure and digital connectivity allowed her to stay connected with her family while in service. She highlighted the potential for technology to bridge geographic and social divides but stressed the importance of ensuring equitable access for women.

Women face a dual burden, balancing domestic responsibilities with professional work, often putting in more total work hours than men. In agriculture, while women make up 80% of the workforce, they own only 10% of land limiting their access to credit and institutional support.

The speaker cited measures such as women-only shuttles, CCTV surveillance, and women-led police networks that have improved urban safety. An example from Nizamabad illustrated how a swift police response enabled by a toll-free helpline addressed a public safety concern within minutes.

While some Northeastern states are seen as empowering for women such as the matrilineal Khasi community and Manipur’s all-women Ima market, the decision-making power is not always equally shared. Protective laws, such as Article 371 safeguarding customary practices, can also inadvertently restrict women’s legal rights. Positive examples like Chizami’s successful handloom weaving initiatives in Phek district, Nagaland, demonstrate how women’s collectives can thrive with the right support.

Ms. Bhavani noted that the NTB is formulating policies with explicit provisions for women, including an additional 10% subsidy for women entrepreneurs and provisions for transgender inclusion. She referenced the “Green Deal” approach in agriculture, focusing on improving women’s access to resources, training, and technology. Mobile based agricultural advisory services, such as apps with pop-up messages and visual indicators, can enhance women’s ability to adopt better farming practices. Even in leadership positions, she said, gender disparity persists, highlighting the need for systemic change rather than isolated initiatives. She urged the audience

to continue asking challenging questions beyond AI and internet access, focusing on structural barriers that limit women's agency.

Ms. Bhavani concluded by thanking conference participants and fellow speakers, including Mr. Manzar, Mr. Akbaruddin, and Ms. Dhulipala, for setting the tone for meaningful discussions. She expressed hope that the two-day conference would spark curiosity, foster deeper insights, and culminate in selecting a strong, action-oriented theme for the following year's gathering.

Paper Presentation: Session 1

Bridging the Digital Divide: Advancing Gender Equity and Social Empowerment through Digital Tools

The first paper presentation session, “*Bridging the Digital Divide: Advancing Gender Equity and Social Empowerment through Digital Tools*,” was chaired by Prof. Manisha Tripathy Pandey from Jamia Millia Islamia and moderated by Mr. Rashad Ullah Khan who is a Senior Research Fellow at CDPP. The session featured insightful presentations that examined critical issues such as women’s access to digital platforms, trust in online spaces, and the role of financial literacy in fostering empowerment.

DEF Technical Session

Governing Digital Disability Inclusion: Lessons from the Samarth SoochnaPreneur Model for Women with Disabilities

Moderator:

Ms. Arpita Kanjilal, Head, Research and Communications, Digital Empowerment Foundation (DEF)

Speakers:

- Ms. Shalini Kala, Independent Researcher and Rural Development Specialist
- Ms. Moumita Barman, Senior Research Associate, CDPP
- Ms. Pokala Suvarna, Samarth SoochnaPreneur, DEF
- Ms. Shubhika Saluja, Dy. Director, Policy Advocacy & Communications, Broadband India Forum

The panel session focused on the crucial intersectionality between disability and gender in the context of India's fast-paced digital transition. It explored the challenges and opportunities faced by rural women with disabilities in accessing digital tools and government schemes. Drawing from real lived experiences and expert insights, the discussion spotlighted the Samarth SoochnaPreneur Programme model for digital empowerment, relevant legal and policy frameworks, and best practices to improve inclusion. The conversation highlighted the gaps in implementation and stressed the importance of community-driven, bottom-up approaches.

Ms. Pokala Suvarna (Samarth SoochnaPreneur, DEF) shared her lived experience. A woman with a disability, Suvarna became a digital entrepreneur after joining the Samarth SoochnaPreneur Programme. She operates a centre providing digital services in her locality, serving as a node for welfare schemes. The impact of the SoochnaPreneur programme on her is that it provided her with ICT tools and a biometric government license, enabling her financial independence and elevating her social standing.

Physical mobility is extremely important, and assistive as well as accessible technologies play a crucial role in enabling digital entrepreneurship and empowerment. While there has often been apprehension about how persons with disabilities (PwDs) can engage in business, the Samarth

SoochnaPreneur programme has dispelled such notions. Through literacy, skill development, and capacity building, it has showcased that PwDs can successfully run enterprises and contribute meaningfully to their communities.

Success stories like hers challenge societal scepticism regarding persons with disabilities as providers. Capacity building, literacy, and training are essential for meaningful inclusion.

Ms. Shubhika Saluja, Dy. Director Policy Advocacy & Communications, Broadband India Forum, Introduced the audience to the legal landscape surrounding disability rights in India, with a focus on the *Rights of Persons with Disabilities (RPwD) Act, 2016*, effective from 2017. The Act marks a shift from a guardianship approach to a rights-based framework, empowering persons with disabilities to live with dignity, equality, and respect. It includes special provisions for women with disabilities and guarantees a range of entitlements, including education, employment, and protection from discrimination.

The Indian Accessibility Standards (IS 17802) were also highlighted, setting guidelines for digital accessibility of websites and apps and applying to both public and private service providers. She further noted that relevant provisions from other legal frameworks—such as CrPC and POSH—support accessibility and protection, reinforcing an inclusive environment for persons with disabilities.

Gaps identified and discussed by her:

- Poor implementation and reluctance from service providers citing operational challenges.
- Lack of sensitisation of the service providers.
- Inadequate compliance and delay (especially in some of the services provided), despite judicial intervention establishing digital accessibility as a fundamental right.
- Data Protection laws (DPDPA) clubs disability with children's rights in providing consent undermining adult agency and digital autonomy, and at times, guardianship, reducing the scope for autonomy and decision making for the people.

Ms. Moumita Barman, Senior Research Associate, CDDP, provided some insights into the data aspects. Digital Divide Statistics: Only 33% of Indian women have ever accessed the internet; only 25% of the women in rural places have ever had access to the internet. South Asian women are 41% less likely to use the internet than men. Workforce Participation Potential: Including 70 million women could boost India's GDP by USD 0.7 trillion.

She delved into existing schemes in the form of government and private programmes, like District Aspirational Programmes, Internet Sathi, Common Service Centres but also pointed out the existence of barriers due to geography, intersectional marginalisation, patriarchy, and lack of adaptability.

Focusing on Global Best Practices, she focused on mobile-based learning in Nepal, device and data voucher schemes in Namibia, and how flexible digital/financial literacy programmes have driven inclusion.

The recommendations put forward by her include that policies must be inclusive, accessible, affordable, and bottom-up. Patriarchal barriers at the local/community level should be confronted and hyperlocal, community-informed models should be promoted.

Ms. Shalini Kala, Independent Researcher and Rural Development Specialist, noted Women with disabilities face compounded marginalisation due to multiple layers of exclusion. Past policies have not been adequately community informed.

Digital models like Samarth SoochnaPreneur empower persons with disabilities to access entitlements and participate in policymaking. Digital solutions should complement—not replace—social inclusion measures.

Mr. Osama Manzar’s observations on the role of the technology sector shed light on how most initiatives are driven by IT/ICT departments rather than social welfare departments, highlighting the need for sectoral integration.

- **Question:**

How do persons with disabilities (PwDs) support themselves and help other marginalised communities? Has their assistance extended to empowering others as well?

According to Ms. Suvarna, it is often an organic and mutually beneficial relationship. For example, she serves as a nodal point in her community—people visit her for guidance and assistance. Those seeking her help include individuals from slums, the elderly, the poor, and others in need. Through her work, she not only supports herself but also empowers and uplifts a wide network of marginalised groups.

Conclusion

The session provided a nuanced discourse on the intersectionality of gender and disability within India’s digital inclusion journey. It recognised the transformative potential of community driven digital models, highlighted gaps in the legal and policy framework, emphasised the importance of accessibility (physical and digital), and called for a shift towards participatory, hyperlocal, and context-sensitive policy making. There was a consensus that empowerment and agency must drive future interventions, and technology should serve as an enabler—not as a substitute—for meaningful social inclusion and rights realisation.

Paper Presentations: Session 2

Tools Technology and Economic Empowerment: Exploring Gendered Impacts of Emerging Innovations

The second paper presentation session, “*Technology and Economic Empowerment: Exploring Gendered Impacts of Emerging Innovations*” was chaired by Ms. Divya Gaur, Programme Lead at the Council on Energy, Environment & Water, and moderated by Mr. Rashad Ullah Khan, Senior Research Fellow, from the Centre for Development Policy and Practice (CDPP). The papers examined a wide range of themes, including digitally mediated entrepreneurship among Muslim women in Kolkata, the impact of AI on gender, gendered subjectivity in online sexuality education, privacy concerns related to menstrual tracking apps, and a case study on digitalisation among women weavers in Tamil Nadu. The session concluded with insightful reflections from the Chair and active engagement with the audience.

Paper Presentations: Session 3

Policy, Governance, and Global Perspectives

The third paper presentation session, “*Policy, Governance, and Global Perspectives,*” was chaired by Dr. Vasudha Katju, Assistant Professor at KSPP, and moderated by Mr. Rashad Ullah Khan, Senior Research Fellow, from the Centre for Development Policy and Practice (CDPP). The papers presented critical issues including gendered labour in the e-waste sector, the impact of the COVID-19 pandemic on the gender digital divide and educational inequality among Muslim girls, and exclusions in digital governance within India’s Public Distribution System.

Special Talk: Increasing Women's Inclusion in the Labour Market: Aspirational or a Matter of Concern

Amitabh Kundu

Sr. Advisor, Development Alternatives

Professor Emeritus, LJ University

Visiting Professor, MANUU

Prof. Amitabh Kundu opened the discussion on women's labour-market inclusion by situating it within a broad development context, connecting digital and communication technologies, health and social services, demographic trends, and labour-force dynamics. His talk blended historical data, recent empirical findings, and methodological reflections to show that while progress has been made, deep structural inequalities persist, demanding targeted policy and technological interventions.

Prof. Kundu raised a procedural and ethical point: if a session Chair also speaks, equal rights and fair time allocation must be ensured. The topic introduced was intended solely for his presentation and not to pre-empt others. This concern was framed within the broader context of technology (ICT, AI), inequality, and vulnerability in social sectors, which together shape outcomes for disadvantaged groups.

He recounted a 2004 UNDP-requested exercise to build an ICT-human development competence index for nine Asian countries. Indicators included skill-based and skill-independent ICT measures (television, telephone, early mobile use, computers, laptop access), alongside social-sector measures (health, education, basic services) and vulnerability disaggregation (religious and ethnic minorities). India ranked mid-table then, but recent checks show dramatic improvement, now ranking at or near the top on several ICT indicators.

Prof. Kundu emphasised digital inclusion as central to India's transition to a developed status, beyond income growth. Current deficits include internet penetration (~48%–55%), low broadband subscription (10%–15%), limited digital payment uptake, and weak cybersecurity awareness. Financial inclusion has improved in account ownership but remains low in account operation, borrowing, savings, and female financial participation compared to developed countries.

Critical health challenges remain, particularly infant and under-five mortality rates. Prof. Kundu stressed that improved digital systems, including health insurance and service delivery, are essential to address these challenges.

Long-term trends show deterioration in sex ratios at birth and among children since the mid-20th century, with only modest improvement in recent decades. Age-group patterns reveal persistent social prejudice affecting child survival and reporting. Anomalies in stillbirth and sex data suggest under-reporting or misclassification linked to induced abortions and data quality issues.

Census and labour-force survey data show low female participation, paradoxically falling with higher education. However, the last five years have seen a positive reversal, especially in rural areas. Manufacturing employment growth has absorbed a large share of women, concentrated in

a few sectors. According to Prof. Kundu, incremental manufacturing employment for women has increased at a rate of 70% in the last 5–6 years, where 42% is from the rural areas.

Research shows that some employment growth is concentrated in low-value, unpaid family work, while other portions reflect genuine labour-market entry and improved earnings. Prof. Kundu concluded that the picture is mixed and requires careful, sector-specific analysis. Improvements in basic amenities (water, sanitation, LPG, electricity) since 2014 have been significant, sometimes faster for Muslim households. Inequality becomes more visible as services transition from low-tech to high-tech provision, with disparities still evident across social groups. According to Prof. Kundu, this study by Dr. Shamika Ravi may not be fully supported by the evidence and that “it has some methodological issues.”

Disparities in high-quality drinking water and sanitation remain pronounced when households are divided by expenditure quintiles, showing that socioeconomic factors strongly influence access to higher-level services.

Prof. Kundu urged a data-driven national debate on equitable and inclusive technology. While improvements are visible, gender and social inequalities persist, requiring continued policy and technological attention.

He stated that technology and digital inclusion are central to development, affecting health, financial inclusion, and labour outcomes, and improvements in basic amenities and ICT matter for vulnerable groups. Data disaggregation by gender, religion, caste, and income is essential.

Prof. Kundu also talked about the interpretation of women’s employment growth; whether it represents substantial empowerment or largely low-value, unpaid work, and suggested that methodologies for calculating improvement rates and data quality concerns complicate demographic and inequality analyses.

According to Prof. Kundu, we need to ensure procedural fairness in forums and equal speaking opportunities. Strengthening digital inclusion, increasing broadband and internet uptake, and providing meaningful digital access should be a priority. We should strive to improve financial inclusion by moving beyond account ownership to active usage and female empowerment. He also mentioned using technology to enhance health outcomes and for reducing mortality rates, promoting quality employment for women through skill development, formalisation, wage improvements, and technology support. He stated that amenities should be targeted with an equity lens, improving high-quality water and sanitation infrastructure. Prof. Kundu also mentioned standardising measurement methods, disaggregating data, and addressing reporting anomalies. Adopting nuanced policy responses combining social engineering, localised interventions, and sectoral strategies will convert female labour-market entry into sustained economic empowerment, he concluded.

Special Address

Farhad Merchant

CEO, Aga Khan Education Service

Mr. Merchant contextually highlights the need for practitioner-focused perspectives in education, presenting an audiovisual overview of the Aga Khan Education Service's 102 years-long impact. Since 1905, it has grown from a single girls' school to 200 schools across 12 countries, with 8 hostels, 3 residential programmes, and a female-to-male student ratio of 48:52 catered by 63% female staff. Noting inclusion must consider exclusion as well, he emphasizes that girls constitute about half of the student population and points out that fully girls-only schools in India are a reflection of how schools also exist in other conservative regions. Technology is framed as a crucial bridge to reduce these gaps, especially given the rural and remote contexts where 91% of areas where their schools operate are rural and students often walk for 2 hours to reach schools.

The dialogue moves to the operational realities of delivering quality education in challenging environments. In India, Aga Khan's 30 units operate across day schools, hostels, and pre-schools in areas with limited internet, bandwidth, and electricity. To address these barriers, the organisation relies on local facilitators and remote staff, with 98% of school staff being local. When connectivity is absent, offline methods and recorded sessions are distributed physically to remote areas. A flipped classroom approach and the use of Student Information Systems (SIS), content management, and assessment tools are implemented, while acknowledging that many approaches must be offline-friendly and adaptable to local conditions.

Mr. Merchant outlines several blended-learning strategies, including cloud synchronisation for progress tracking, motivation through training and gamification, and adaptive learning to improve outcomes. They caution that MOOCs often yield low completion rates (around 15%), so local and offline resources are essential to sustain engagement. Special attention is given to sociocultural challenges, such as radical or fundamentalist attitudes toward girls' education, and to risk management in politically unstable contexts. Certification for K-12 learning is discussed as a crucial element along with an emphasis on online professional development for teachers to complement their expertise with effective online pedagogy to make them "adept."

Finally, Mr. Merchant advocates for virtual and hybrid models tailored to developing nations, rather than direct copy-pasting Western solutions. Virtual schooling is currently urban skewed in India, so the goal is to preserve social engagement while leveraging online tools to close learning gaps amplified by the pandemic. Accelerated and personalised learning is needed for students who fall behind, with consideration of financial and familial resource constraints. The speech closes with a call to continue policy work and advocacy to support practitioners, acknowledging that technology is not a panacea but holds substantial potential when integrated with classroom learning and community-based support.

Valedictory Address

Meera Shenoy
Founder, Youth4Jobs

Ms. Meera Shenoy shared compelling insights drawn from decades of work at the intersection of disability, gender, technology, and rural livelihoods. She emphasised the unique and compounded barriers faced by women who are disabled and from rural communities describing these as a “fourfold burden” encompassing gender bias, disability stigma, digital exclusion, and poverty. The session underscored the urgent need to shift from a cycle of exclusion to one of opportunity through targeted, inclusive, and tech-enabled interventions.

Drawing from a large-scale project with Self Help Groups (SHGs) in Karnataka, Ms. Shenoy revealed that women with disabilities often face exclusion even within women’s collectives. She noted their near invisibility in policy discourse and the persistent challenge of extremely low employment levels in this demographic.

Ms. Shenoy framed livelihood access as a critical lever for change, highlighting technology training as a powerful enabler to replace exclusion with opportunity. The internet, she noted, is not yet a safe or inclusive space for women with disabilities, with most digital content structured for men and lacking accessible, localised formats.

Youth4Jobs’ work in government schools integrates script-to-voice technology, basic English, and digital skills alongside multi-sensory learning tools (such as rain sounds and colour scents) to prepare students with disabilities for future employment.

Through 57 training centres, the organisation delivers digital literacy, soft skills, and life skills training, achieving job placements for 60%–70% of graduates. During COVID-19, class timings were adapted to accommodate domestic responsibilities, especially for mothers. Partnerships with MSMEs helped unlock 60% of opportunities locally, enabling women to work within their communities.

The pandemic saw the rise of nano-enterprises as viable livelihood options for women with disabilities. However, accessing government seed funding remains challenging due to bureaucratic hurdles.

Ms. Shenoy introduced “Swarajability,” India’s first fully accessible livelihood platform for Persons with Disabilities (PwDs), featuring: 179,223 registered youth, 1,337 registered companies, Accessibility across all 21 disability categories, AI-based job matching and communication tools designed for inclusivity

She also shared a success stories: Kameshwari—A woman with disability who now works as a caterer at Google, supported by funding from IKEA’s global head after a chance meeting. Lulu— orphaned and denied inheritance, she became financially independent through employment, gaining both economic stability and personal agency.

Ms. Shenoy closed by drawing on the Youth4Jobs model, reinforcing that dignified livelihood access is essential for meaningful inclusion. She urged stakeholders to design interventions that dismantle structural barriers and open pathways to independence for women with disabilities.

Closing Remarks

Vasudha Katju

Assistant Professor

Kautilya School of Public Policy (KSPP)

Dr. Vasudha Katju wrapped up the day's sessions by reflecting on various perspectives, research, and lived experiences shared since the morning. Acknowledging that it would be impossible to cover every detail, she instead drew out the themes that surfaced repeatedly across presentations and discussions, focusing on the interplay between gender and technology.

Many contributions centred on access to technology—not just whether people can use it, but whether they own and control the devices themselves. The digital divide came up in different forms, with several speakers stressing that providing infrastructure is not charity but a way of enabling equal participation. There was support for bottom-up approaches to defining what access should mean in practice.

Technology alone does not guarantee change; it has its own constraints. In some situations, the very tools intended to widen access can themselves become barriers. The consensus was that technology needs to be embedded in broader social and institutional contexts to work effectively.

The idea of “meaningful access” featured strongly—ownership is one thing, but decision making power and real control over the technology matter too. Social and economic benefits were discussed, both for individuals and for economies at large. Access was also framed as a pathway to dignity, ambition, and justice, not just a functional capability.

Examples shared ranged from digital payments via UPI to menstrual tracking apps. Trust, safety, privacy, and surveillance were common concerns. Surveillance was discussed both in the sense of community control and in the way platforms moderate and restrict content.

Technology's potential to foster independence, freedom, and empowerment was recognised. At the same time, older social practices; such as restricting women's use of technology, can be reproduced in digital form. Instances of minority women being harassed online were noted, alongside issues like stereotyping, trolling, and platform-specific restrictions.

Calls for policies designed with women's needs at their core were frequent. Speakers emphasised on community-led and localised policymaking. Digital tools were seen as a way to involve citizens more directly in decision making. Institutional inclusivity and accountability came up repeatedly, as did the ongoing challenges of effective implementation.

Dr. Katju reminded participants that her overview could only touch on the breadth of ideas raised during the day. She thanked everyone for their engagement and contributions and looked ahead to continuing these discussions in the next day's sessions.

DAY 2:

August 9, 2025

Venue:

*International Institute of
Information Technology,
Hyderabad (IIIT-H)*

DAY 2

Venue: International Institute of Information Technology, Hyderabad (IIIT-H)

About the Conference

Anjana Divakar

*Executive Director, Public Policy
Centre for Development Policy and Practice*

Ms. Anjana Divakar, Executive Director, Public Policy, from the Centre for Development Policy and Practice (CDPP) welcomed attendees to day 2 of the 4th Gender and Inclusion Conference. She reflected on the progress of the conference over four years, highlighting its evolving focus from broad gender and inclusion issues to specific themes like Muslim women's identity, voice, agency, and women's workforce participation and how this year's spotlight is on the intersection of gender, technology, and socioeconomic empowerment. She talked on the conference exploring how technology can both empower and can include women and gender minorities, and seeks to build more equitable and inclusive digital systems if rightly deployed and how the sessions aim to challenge assumptions, inspire new questions, and promote collective action toward using technology as a tool for equity rather than control. The conference, Anjana noted, emphasises inclusion of all genders and hopes to be a space for reflection and action.

Inaugural Address

Amir Ullah Khan

Member

Telangana Public Service Commission

Dr. Amir Ullah Khan reflected on persistent gender gaps in India, especially within technology and higher education. He emphasised that women remain the most vulnerable demographic, citing that women constitute about 49% of the population and India performs poorly on multiple gender indices despite overall improvements in some sectors like Ease of Doing Business (EDBI). The next 30 years require deliberate action, evidence-based focus, and leadership to address these imbalances. He noted the conference's collaboration with Digital Empowerment Foundation as a meaningful bridge between gender and technology. *"It was the barbaric days of the 1980s after all and not the barbaric days of today."*

Tracing the history of technical education, he noted that out of 1000 students, there were only 11 girls in engineering. He pointed out a stark reversal in the computer science programme of the 1980s as well, which initially had significant female representation of nearly two-thirds, but over the last four decades female participation dropped sharply (globally around 11:100 in many places). He suggested this decline stems from structural and financial shifts that privileged male participation and dominance in lucrative technical fields. By contrast, earlier eras saw less legacy in the field and fewer gatekeeping barriers, which allowed more women to enter computing.

Looking ahead, Dr. Khan discussed the transformative potential of new technologies which provide an even or equal chance, including AI and VR, and cautions about who will benefit. He observed that the COVID-19 pandemic caused huge advances in technology and changed the landscape of the future of work in the coming 30 years. He argued that future workplaces can be "far more welcoming" for women if they are multidisciplinary jobs, yet cautioned that automation may initially replace routine jobs, posing risks for women who are involved in such jobs if proactive measures are not taken.

He advocated for more multidisciplinary training and flexible pathways that allow late entrants into technical careers, highlighting concerning statistics about 82% women with PhDs dropping out of the workforce. He highlighted the example of how India produces thousands of doctors every year, yet when we fell short of doctors during the pandemic we couldn't find many candidates as a majority of these were women who were not allowed to work by social constraints and forced to "sit in the kitchens" highlighting domestic care work.

The speech also acknowledged that we are currently only talking about the binary. Once we start looking at the gender lens for all other genders, the problem for inclusion becomes even more stark in the future of work and digital spaces. The speech also honours Prof. Shahida Murtaza, a long-serving dean of the School of Arts and Social Sciences at MANUU, who is nearing retirement after nearly 35 years of work. Throughout, Dr. Khan emphasises the need for evidence-based, gender responsive policy, and education reforms to ensure that advancements in technology truly expand opportunities for women, rather than reinforcing existing disparities.

Welcome Address

Shahida Murtaza

Dean, School of Arts & Social Sciences

Department of Women Studies

MANUU

The welcome address to day 2 of the Gender and Inclusion Conference highlighted the critical importance of addressing the digital divide between rural and urban India, with a special focus on gender inclusion and socioeconomic empowerment. Prof. Shahida Murtaza congratulated the conference team and expressed gratitude for the opportunity to engage in this discourse, reflecting on her own experience from 20 years ago in attempting to bridge this digital gap by working towards digitisations, adopting villages, supporting rural women, though facing challenges such as funding constraints.

The address emphasised the need for universities and institutions to actively participate in narrowing this digital divide especially in rural areas and villages and driving ground level change aligned with empowerment goals. Mrs. Murtaza described real life examples like addressing health and domestic violence issues digitally in distant villages, showing positive community impacts.

A critical concern expressed was the gap in digital literacy and skill development essential for accessing digital resources, especially in rural areas. Mrs. Murtaza pointed out the disconnect between initial efforts and their long-term evaluation, urging sustained institutional support and financial backing to foster impactful initiatives.

The role of digitisation in improving access to health, education, employment, and financial services was underlined. She urged policy and planning experts to carefully consider urban expansion impacts and the socioeconomic realities of marginalised communities, including minorities and the third gender, advocating for broader inclusion in digital empowerment.

Mrs. Murtaza called for collaborative, continued efforts to patch the digital divide, emphasising gender fluidity and inclusivity, and transforming technologies into tools for equity and empowerment across all levels of society.

Keynote Address

Purnima Chauhan

IAS (Retd)

Govt. of Himachal Pradesh

Dr. Purnima Chauhan reflected on her broad government experience across 25 departments in Himachal Pradesh and other states, advocating for gender inclusion as a core lens in governance and policy. She criticised gender-blind reforms, highlighted historical and global examples of women's underrepresentation in leadership and decision making, and stressed the need to address social norms, caregiving expectations, and structural barriers alongside technology and policy.

Dr. Chauhan traced a long arc from ancient times of the Vedic age to contemporary movements like Chipko Andolan, noting persistent patriarchy and misogyny that act as "bouncers to the men's club," i.e., gatekeepers in education, administration, and public life; she cited landmark issues (e.g., Nirbhaya, gender-based violence, and her attempts at gender responsive budgeting in Himachal Pradesh to set up gender cells) and emphasised that SDG 5 requires multipronged, cross-sectoral action integrated into local indicator frameworks, including urban bodies and not just rural contexts. She emphasised that we are merely five years away from the 2030 Agenda.

She underscored practical gaps: low female participation in digital services (global ~22%, India ~34%), limited gender-disaggregated data, and specific examples like transport infrastructure lacking gender sensitivity (women wanting low floor buses) and corrupt practices in local governance (e.g., Sasur and Pati Pradhan). She urged mainstreaming gender through design choices, participation of women in decision-making councils, and culturally sensitive, context-specific approaches. Exclusion of women in such policies will make interventions pointless as seen in examples for the wells in Bangladesh or windows in kitchens of Somalia.

Her thematic emphasis included the necessity of visibility for women role models, transforming mindsets, and ensuring that policies reflect lived realities of women, from household work to public leadership, while acknowledging that religion, culture, and custom can both constrain and enable change. More importantly she said that the top role models of women breaking the glass ceiling are like stars (Taare) but we need these *Taare Zameen Par*, i.e., grassroots women leaders.

She concluded with a call for women's self-empowerment (*Sirf Beti Bachao, Beti Padhao nahi magar Beti ko Atmanirbhar Banao*, i.e., empower the girl child instead of merely letting her access education and keeping her safe) and for digital technology to be gender-inclusive, noting that true progress requires both structural reforms and a shift in societal attitudes, backed by concrete, scrutinised governance mechanisms and accountable implementation.

Panel 1: Bridging the Digital Divide—Advancing Gender Equity and Social Empowerment Through Digital Tools

Chair: Ms. Rubina Nafees Fatima, CEO-Founder, SAFA

Panellists:

- Ms. Soma Wadhwa, Senior Researcher, UPES and CDPP
- Mx. Koyel Ghosh, Managing Trustee, Sappho for Equality
- Dr. A.L. Sharada, Board member Trustee, Population First
- Ms. Japleen Pasricha, Founder-CEO & Editor-In-Chief, Feminism in India (FII)

Before the panel discussion began, the release of a new publication, “The Cycle of Change,” a collaborative effort with CDPP, Goonj and NFI, took place. This policy brief provides data-driven insights and a comprehensive overview of India’s progress and challenges in menstrual health, hygiene, and waste management. The release of the policy brief set a context for the day's panel, reminding the audience that a holistic approach to social empowerment must encompass a range of interconnected issues, from public health to technological inclusion.

Ms. Rubina Nafees Fatima opened the discussion by framing India’s digital transformation as a profound paradox. While the nation is experiencing a digital revolution marked by millions of new users, unprecedented smartphone penetration, and the rallying cry of rural connectivity, a layered reality of exclusion persists. Ms. Fatima, drawing on her extensive grassroots experience, highlighted the gap between the promise of easy access to digital platforms for schemes like Start-up India and the reality faced by semi-literate or illiterate women in urban slums. She shared a crucial insight: while a woman might have an Aadhaar card and a profile on a digital platform, her true digital footprint remains fragile. This is particularly true in accessing financial schemes where a strong digital presence is a qualifier for receiving loans at the click of a button.

Ms. Fatima emphasised that while she is a proponent of technology as a tool for progress, its true form is not uniform. The panel’s central objective was to explore if this expansion of digital access has been equitable and safe. She posed a critical question to the audience and panellists: Is the internet a promise of education and enterprise, or is it a paradox of hate speech, surveillance, and trolling? She called for a deeper conversation that looks beyond the obvious benefits and unpacks how digital tools, meant to empower, can also alienate. The goal, she stressed, is not merely to bridge the gap but to “walk the bridge,” building sustainable ecosystems that empower everyone.

Ms. Japleen Pasricha initiated the conversation by directly challenging the assumption of technological neutrality. She argued that technology is a reflection of the society that creates it and is, therefore, inherently imbued with existing biases. Ms. Pasricha provided compelling examples of how these biases manifest in daily life.

She cited the case of Amazon’s AI hiring tool, which was abandoned because it systematically downgraded resumes containing the word “women’s.” This was not a glitch but a direct consequence of the AI being trained on a hundred years of data from a male-dominated tech industry. The model simply learned that male resumes were “better” because they were more prevalent in the historical data.

Another powerful example she offered was Google Maps. While the app’s primary purpose is to provide the fastest route, it often fails to offer the safest route, a critical factor for women

navigating alone at night. This oversight, she explained, is because safety is not a parameter on which the algorithm was initially designed. She also pointed out that early health tracking apps on platforms like Apple Health and Fitbit failed to include a basic feature for women: menstrual cycle tracking. This was a clear sign that the design was centred around male physiology, reinforcing the idea that women's health needs were an afterthought.

Ms. Pasricha emphasised that gender-sensitive design must be integral to the technology from its inception. She also highlighted the issue of language barriers and the cultural context of online harm. She described the challenges of getting global platforms like Meta to recognise local, casteist, or gendered slurs. These platforms' AI models, often trained in English, fail to understand the nuanced and deeply painful context of slurs like "chinky" or "chakka," which are rooted in specific cultural and social realities. She poignantly connected online harm to real-world violence, citing the horrific Sulli Deals and Bulli Bai cases where Muslim women were targeted and auctioned online. This, she argued, is not a problem that can be dismissed as "just happening on a screen," as it can lead to doxing, identity theft, and severe mental health consequences, making digital violence a form of systemic murder.

Ms. Soma Wadhwa brought a message of hope and optimism, sharing powerful anecdotes from her work on digital capacity building. She shared the story of Kamla, a woman in a village in Uttar Pradesh whose life was transformed not by a formal training programme but by a simple act of her husband forgetting his smartphone. In that moment of accidental access, Kamla discovered a new identity: she became a shopkeeper, taking orders on WhatsApp and connecting with customers online.

Drawing from her evaluation of two programmes—TARAVI (Technological and Rural Advancement for Women Empowerment) and GOAL (Going Online as Leaders)—Ms. Wadhwa demonstrated that digital inclusion is a deeply human process. TARAVI successfully trained over 800 women in rural Uttar Pradesh, enabling them to use smartphones to run businesses, from selling vermicompost to offering beauty services. The impact was tangible, with existing entrepreneurs seeing a 16% rise in income within three months and aspiring entrepreneurs growing their earnings from 0 to a 27% increase. More importantly, she shared the words of one woman who said, "It makes me feel like a real businessperson." This, Ms. Wadhwa argued, is the true measure of success: a shift from being sighted to being seen.

The GOAL programme, which paired young tribal women with urban professional mentors, further highlighted the importance of mentorship and trust. She recounted how a mentee, who was too shy to speak in a group call, was coached to find her voice and eventually emceed a public event in her village. Ms. Wadhwa's key takeaway was that technology alone does not empower. It must be paired with dignity, trust, and purpose. The women in these programmes did not become passive content consumers; they became creators, entrepreneurs, and leaders, using technology to rewrite their roles and uplift their communities.

Mx. Koyel Ghosh provided a sobering account of the digital challenges faced by transgender and gender-diverse individuals. They began with the poignant story of a young trans man who, after his top surgery, was traveling by plane for the first time. Despite his physical transition, his documents still bore his previous name and gender assigned at birth. This led to confusion and humiliation at the airport security check, highlighting a systemic failure of digital identity in India.

Mx. Ghosh explained that for many trans and gender-diverse individuals, accessing digital platforms to update their identity documents is a privilege they do not have due to social exclusion, family violence, and a lack of access to computers or the English language. They shared a stark statistic from their work in West Bengal, where in two years, only 115 people had been able to get their mandatory trans cards, despite a population of over 10,000 trans people. This digital exclusion leads to a fear of being stateless or detained.

They also delved into the paradoxical nature of digital platforms for the LGBTQ+ community. While online spaces offer solidarity and a sense of belonging, they are also rife with risks. Mx. Ghosh detailed how the desperation for connection and love in a world lacking physical community makes vulnerable individuals easy targets for harassment, blackmail, and fraud. They criticised the lack of platform accountability, noting that many platforms fail to recognise local slurs and hate speech as violence. They ended their powerful speech with a heartbreaking account of a 17-year-old who died by suicide after being subjected to unimaginable online hate for posting a picture of himself in a sari. Mx. Ghosh argued that this was not a death by suicide but a systemic murder, a brutal consequence of a digital space that has moved from being a tool for users to a platform for abusers.

Dr. A.L. Sharada, the final speaker, shifted the focus to the pivotal role of media in shaping the digital narrative. Coming from Population First, which runs the “Laadli” campaign, she spoke about how media advocacy can be a powerful tool to challenge patriarchal norms. Her organisation actively works to promote positive portrayals of women in media and to encourage women to take ownership of technology.

She also addressed the immense threat faced by women journalists and content creators online, from trolling and hate speech to coordinated harassment campaigns. She brought up the tragic suicide of a young woman named Radhika Yadav, a budding tennis player who was being harassed for her social media activity. She used this example to underscore the severe mental and physical toll that online harassment can take. Dr. Sharada called upon media institutions to act as change agents, not just to report on these issues but to actively reshape narratives, create safer environments for their female employees, and champion equitable digital participation. Her message was a call to action: the media holds the power to normalise women's technological agency and to use its platform to fight back against the forces of online misogyny and hatred.

The panel concluded that a true digital revolution will not be measured merely by connectivity statistics but by the extent to which technology can distribute power, protect dignity, and foster trust. Physical access to devices must be paired with skills, trust, and psychological safety to empower users to become agents of their own change.

Technology must integrate multilingual, cultural, and gender perspectives from inception. Without this, technology will only serve to reinforce existing biases and exclusionary practices. Online harm affects communities differently based on gender, caste, class, sexuality, and religion. A nuanced, context-aware approach is required to protect the most vulnerable.

Empowerment is realised when individuals transition from being technology users to decision-makers and creators. This shift from consumer to creator is central to closing the digital divide. Media institutions hold the power to challenge harmful narratives and normalise equitable digital participation. They must take a leadership role in shaping a more inclusive digital culture.

The panel concluded with a unified call to action: bridging the digital divide requires coordinated effort from designers, policymakers, educators, and the media. The responsibility is a shared one, and the goal is to build a digital space where all future generations can not only survive but truly thrive.

Panel 2: Technology and Economic Empowerment—Exploring Gendered Impacts of Emerging Technologies

Chair: Prof. Syeda Sameen Fatima, Registrar & Professor, CSE, Anurag University

Panellists:

- Prof. Manisha Tripathy Pandey, Professor, Department of Sociology, Jamia Millia Islamia (JMI)
- Ms. Grace Banu, Founder, Director, Trans Rights Now Collective
- Ms. Uha Sajja, Associate Director, Social Impact and Entrepreneurship, WE HUB
- Prof. Sridevi Gummadi, Professor, School of Economics, University of Hyderabad
- Ms. Mousumi Kabiraj, Programme Associate, Council of Energy Environment and Water (CEEW)

Prof. Syeda Sameen Fatima, Chair and Moderator, opened the session by welcoming the participants and reflecting on the value of hearing stories and research from those working in the field. She shared her professional background in computer science and engineering, recounting personal challenges faced during her tenure at Osmania University, culminating in her appointment as the first woman principal of the College of Engineering. She emphasised the need to focus on fairness and justice rather than solely on the term “equality,” advocating for equality in opportunities, treatment, and respect. She noted that achieving gender empowerment, as highlighted in the Sustainable Development Goals, has the potential to advance other development objectives such as poverty reduction and economic growth.

Prof. Manisha T. Pandey began by appreciating the conference for presenting empirical realities that complement classroom theory. She noted that technology is not gender neutral and can both enhance or limit individuals’ ability to earn, own, and control resources, citing an example where a woman without her own mobile phone depended on her husband’s device. Her ICSSR-sponsored project, *State, Market and Digitalisation: A Study of Digital Democracy and Exclusion in India*, covers the capital cities of five states, Delhi, Jammu & Kashmir, Gujarat, Kerala, and Assam, using mixed methods, including survey data from nearly 5,000 respondents and focus group discussions. She also referred to a pan-India Google survey on the impact of AI and IoT on college-going youth. Preliminary findings reveal device and internet access gaps, lack of training, online harassment, and family restrictions, with many technology policies failing to address the intersectionality of gender, caste, rural-urban divides, and region. She observed that technology often functions as a tool of exclusion rather than empowerment, stressing the need for ownership and control over technology and pointing to algorithmic biases in design, such as default female AI voices. Citing field examples like women e-rickshaw drivers in Guwahati adopting digital payments, she emphasised that digital inclusion is not limited to financial inclusion. She also noted that even in Delhi’s urban slums, smartphone access is limited, often to one device per family, underscoring how technology operates as a social and political construct shaped by socioeconomic realities.

Prof. Sridevi Gummadi began by situating her remarks within an economics perspective on labour market discrimination. She noted that discrimination is often discussed in terms of wage gaps or occupational segregation between genders, but stressed the importance of addressing intersectionality, as economic inequality in India stems from social inequality. Citing Dr. B.R. Ambedkar’s early work linking social and economic discrimination, she referenced Gary Becker’s

theory of treating equals unequally in the labour market and posed the question of whether discrimination arises from individuals or institutions. She observed that both exist, with institutional practices often assigning certain groups to primary or secondary jobs, reinforced by cultural norms that carry over between home and workplace.

Drawing from NSS and other data, she noted that female labour force participation rose between 1983 and 2004, but recent trends show structural reversal, with employment shifting back toward agriculture despite earlier growth in the service sector. She questioned the nature of the 7 million jobs reportedly created in the last five years and pointed to declining participation among women aged 15–40 years, partly due to higher education enrolment but also to persistent labour market discrimination. Even with equal education and skills, women face unequal pay, particularly in the service and private corporate sectors, and experience occupational segregation and unequal access to technology and skill development.

Her research included interviews with 50 transgender individuals in Hyderabad, which revealed that their primary challenge is access to employment itself, followed by barriers to higher education despite recent affirmative measures. She highlighted that women and transgender persons from marginalised social groups face even higher discrimination. Wage gap analysis indicated that only about 35% can be explained by measurable factors such as education, age, and skills, with the remainder attributed to discriminatory factors including caste, gender, and religion across sectors.

She emphasised that technological innovation and skill development can reduce occupational discrimination only if marginalised groups have equitable access to education and training. Examining state policies, she noted that while reservations, such as 30% in local bodies for women, meet numerical targets, real empowerment is limited if women cannot participate in decision making or control household financial resources. She concluded that true empowerment must go beyond access to devices or nominal positions to include financial, occupational, and educational control.

Ms. Uha Sajja, Associate Director at WE Hub, Telangana, introduced her work leading the Social Impact and Entrepreneurship vertical, which operates across all 33 districts of the state. WE Hub, a Section 8 organisation under the Government of Telangana's IT Department, has been active since 2018, working with entrepreneurs from both urban and rural areas, as well as self-help groups, transgender persons, persons with disabilities, minority communities, and girl students aged 17–23 years. She outlined the organisation's two main verticals—urban innovation and rural outreach—and explained that all participants begin with a cybersecurity course, progressing through stages from pre-incubation to incubation and acceleration. The programmes include financial literacy, digital literacy, mentoring, and credit linkages. To date, WE Hub has supported over 8,000 women-led startups through 88 programs, reached over 10,000 women across sectors and geographies, facilitated Rs. 180 crores in credit linkages, engaged 5,000 students, and created over 7,000 jobs.

Ms. Sajja illustrated WE Hub's work through several case studies. One involved an artist from Cherial village, known for 450-year-old storytelling mask making traditions, who planned to close her shop during the COVID period due to lack of digital market access. WE Hub intervened with product standardisation, design upgrades through partner T-Works, and online marketing support, enabling her to sell internationally and become a master trainer. Another case featured a transgender woman from Karimnagar, identified by local officials for her artistic skills, who was trained and supported to establish "Asha Photo Studio," now serving as one of WE Hub's

empanelled photographers. A third example was a woman from a remote mandal in Peddapalli district producing millet biscuits without adequate packaging or marketing; WE Hub facilitated lab testing, branding, and packaging, leading to her products being sold in the Telangana Secretariat canteen.

She also described interventions for tribal artisans, including training in photography and Instagram use to market traditional products online. Challenges remain, particularly the lack of personal phone access for women, often controlled by male family members, which complicates digital onboarding and training. To address this, WE Hub encourages participants to acquire at least basic mobile phones, given that programmes operate in a hybrid online-offline mode. Modules are customised for self-help group members, urban entrepreneurs, PWD groups, transgender women, and first-time users of computers or smartphones. Ms. Sajja concluded by acknowledging persistent barriers but emphasised the need for adaptive measures to enable women and girls to pursue entrepreneurship, diversify beyond STEM fields, and transition from livelihood activities to formal business ownership.

Ms. Grace Banu, activist and technologist, shared her experiences and perspectives as a Dalit transgender woman, highlighting the multiple and intersecting barriers faced by marginalised trans communities in accessing technology, education, healthcare, and public services. She noted that for many trans persons, particularly Dalit and Adivasi trans individuals, digital platforms remain inaccessible due to lack of skills, devices, and secure identity documentation. During the COVID-19 pandemic, her community faced urgent challenges, with many trans persons engaged in sex work attempting to move online without knowing how to protect their privacy or secure their information. She described difficulties in updating Aadhaar cards to reflect transgender identities, as the process often required family-controlled mobile OTP verification and supporting documents that had been destroyed by relatives.

Ms. Banu also detailed discriminatory experiences in healthcare, with trans persons being denied appropriate services or subjected to invasive questioning. During the pandemic, HIV-positive trans persons were unable to travel to collect medicines without disclosing their status at police checkpoints, leading her organisation to arrange direct home delivery. She stressed that while policies and laws exist, they have not significantly changed societal attitudes, resulting in continued exclusion.

Turning to education, Ms. Banu described how most trans persons drop out at school level due to stigma and economic hardship. She recounted her own journey as India's first transgender engineer, completing her degree without government scholarships despite qualifying under Scheduled Caste criteria, because she was denied both SC and trans-specific benefits. She emphasised the absence of reservations for trans persons in education and employment, citing the example of 153 trans candidates who appeared for Tamil Nadu Group IV exams in 2013 but were not selected despite high scores, as they were compared directly with cisgender candidates.

Ms. Banu further discussed the lack of safety in both physical and online spaces, noting that trans and queer individuals, particularly from rural areas, face identity-based abuse and violence, and that online reporting systems fail to address non-English or local-language slurs due to limitations in AI content moderation. She argued that casteism, transphobia, homophobia, and other biases are embedded in digital spaces, and that addressing these requires inclusive, intersectional policies that recognise overlapping forms of marginalisation, including those affecting persons with disabilities. Ms. Banu concluded by calling for policies that actively protect

and empower marginalised communities across multiple axes of identity, ensuring both online and offline safety and access to opportunities.

Ms. Mousumi Kabiraj, representing the Council on Energy, Environment and Water, spoke on the role of decentralised renewable energy technologies in empowering rural women. She explained that her work focuses on clean energy-powered livelihood solutions such as solar dryers, refrigerators, silk reeling machines, and pumps, which address erratic power supply, reduce drudgery, and enhance productivity. She shared the example of *Kuni Dehuri*, a 35-year-old woman from a remote tribal village in Odisha, who shifted from the labour-intensive and undignified process of thigh reeling silk to using a solar silk reeling machine. This eliminated dependence on unreliable grid electricity, improved working conditions, and allowed Kuni to train over 500 other women; her story was also featured in *Mann Ki Baat* in 2022. Another example was *Pushpani* from Denkanal district, leader of a women's farmer producer organisation, who addressed significant post-harvest losses by adopting a solar dryer, converting 500 kg of wasted vegetables into dried products and generating approximately one lakh rupees per month, with 70–80 women engaged in associated activities.

Ms. Kabiraj outlined multiple barriers that rural women face in adopting such technologies, illustrated through the fictional character “Rita”: lack of awareness, difficulty accessing suppliers, limited affordability due to restrictive financing norms, insufficient training, and mobility constraints in reaching markets. She emphasised that technology adoption must go beyond distribution to ensure ownership, usage, and sustained income generation. Her programme addresses these barriers through partnerships with financing institutions to reduce high interest rates and offer customised repayment models; collaborations with local distributors to provide hyperlocal access and demonstrations; and promotion of “Sakhis”—300–350 women champions who both use and advocate for the technologies.

She also noted work with policymakers to link these solutions with government schemes, self-help group networks, and rural training centres, as well as the importance of sex-disaggregated data to understand gender-differentiated impacts and needs. A 2023 study by her organisation estimated that such decentralised renewable technologies could enhance 37 million livelihoods in India. She concluded that mainstreaming women in this sector requires multi-stakeholder collaboration and sustained effort, describing the journey as “long and bumpy” but essential for inclusive development.

During the Q&A session, Ms. Uha Sajja was asked how individuals seeking support could approach WE Hub. She responded that those interested in entrepreneurship or student programmes can write via the organisation's website (wehub.telangana.gov.in) or call their women's hotline *Mahilawani* at 993169994.

Ms. Grace Banu was asked how emerging technologies could create economic opportunities for trans individuals facing systemic discrimination. She noted that while some trans persons are running small businesses and self-help groups, they need support with branding, advertising, and digital platforms. She highlighted the example of Tamil Nadu's “Thangi” app, developed for trans persons to access identity cards, loans, and grievance redressal, after community advocacy led to a change from its earlier name “Third Gender App.” She suggested that similar apps and training resources, particularly to address issues such as mental health, could be transformative for LGBTQ+ communities.

The session concluded with thanks from the Chair, who noted that the panel offered rich storytelling on education, economic empowerment, and social inclusion, and closed with the hope of a “super-gender world” of equality.

CDPP Session: Digital Health Publication with Focus on Findings Related to Gender, Caste, and Class

Chair: Prof. Amitabh Kundu, Senior Advisor, Development Alternatives & Professor Emeritus, LJ University & MANUU

Panellists:

- Mr. Osama Manzar, Founder-Director, Digital Empowerment Foundation
- Dr. Ali Mehdi, Founder, UHC360
- Ms. Nahia Hussain, Vice President, Policy Affairs, CDPP
- Ms. Ataiya Bano, HealthPreneur, Digital Empowerment Foundation
- Ms. Harshitha Guddanti, Network Engineer, Digital Empowerment Foundation

The session began with CDPP and collaborators releasing the publication on Advanced Digital Health, and a book on the Muslims of Bihar. The speakers reflected on the value of state level studies for policy. Prof. Abdul Shaban gave a commentary on the history of minority studies in India, contrasting older sociological literature with new, institutionally anchored economic approaches; the remarks traced contributions of earlier scholars, the evolution of minority studies, and the policy relevance of the state-level volumes.

Ms. Nahia Hussain opened the session with the launch of CDPP's Advanced Digital Health publication, outlining its central concern: disparities in digital health access across gender, caste, and class in India. Drawing from two surveys conducted in partnership with COPPI—one with 5,000 respondents gauging familiarity post-pandemic, and another with 1,000 active users of digital health services—the study examined how structural inequalities shape who benefits from digital health systems and who remains excluded. Expert essays complemented the data with analysis of political, social, and economic contexts.

- Marginalised communities, particularly Muslims, Sikhs, and OBCs, rely more heavily on private third-party apps than government health platforms.
- CoWIN enabled 69% of people to be fully vaccinated but faced usability and connectivity challenges.
- Aarogya Setu adoption was lowest among Muslims (46%) and STs (37%).
- While 61% of respondents reported using telemedicine, it's uptake was far lower among STs (40%), with key barriers including lack of physical exams, poor connectivity, and privacy concerns. Although 91% of respondents expressed satisfaction with safety and cost, communication and attentiveness were lacking, particularly for SCs, STs, and Buddhists. A third of respondents were unaware of their diagnosis or treatment plan.
- Private hospitals (30%) and PHCs (27%) were most used, but many respondents faced long waits, limited appointments, and geographic barriers. Unlicensed practitioners filled gaps, especially for Sikhs and OBCs.
- Income, education, and age affected access; women reported higher use but more barriers, while STs and Muslims faced lower adoption and higher distrust. Privacy concerns were particularly acute among Sikhs and Christians.
- 81% of respondents reported having used digital health services. Principal barriers reported: internet connectivity, smartphone ownership, and complexity/usability of certain apps. Uptake skewed toward younger and more educated respondents.
- Women faced additional barriers: app language difficulties and a higher rate of not owning a personal smartphone.

- Scheduled Tribes (ST) recorded the lowest usage rates across many indicators. Muslim respondents showed lower adoption on several indicators. Smartphone ownership and connectivity were key constraints in marginalised groups.
- Many users access services via local centres where staff assist them; a majority of users relied on such third-party help. Muslim and Sikh respondents showed higher reliance on intermediary assistance.

Mr. Osama Manzar shared the concept of Sochnapreneurs, who are grassroots digital health facilitators. The examples from Rajasthan illustrated how lack of infrastructure, transport, and social acceptance, especially for Muslim women and the elderly, hinder adoption.

Soochnapreneurs, perform multiple functions of being empathetic community actors, social workers, health workers, bankers, information intermediaries, and last-mile trustees. Data collection by Sochnapreneurs, made the survey feasible and created local livelihood opportunities for the CDPP study.

Mr. Manzar emphasised that healthcare and health information are built on trust; introducing digital platforms requires local human presence to establish that trust. Local centres and intermediaries help people navigate OTPs, forms and teleconsultation steps, increasing uptake and acceptability. He shared that health is undergoing rapid platformisation; while platforms can increase reach, they also risk depersonalising care. Mr. Manzar urged for empathetic platform design, strong privacy safeguards, and formal support for intermediary networks.

Ms. Harshitha (from Chirala) described barriers for women in seeking gynaecological care due to stigma, domestic workload, and language gaps with Sochnapreneurs acting as translators and advocates. She has training in MCA and placed as a network engineer/field coordinator and runs awareness programmes and local CSC/smart-centre activities.

Women often avoid or delay seeking general (non-emergency) healthcare due to household responsibilities and family restrictions and most of the time, preventive care is frequently deprioritised. Occupations like farming, weaving, etc., is time consuming. This reduces the opportunities to seek care regularly. Many women require translators or local mediators, particularly for gynaecological consultations as translation increases comfort and uptake. Many field centres assist with OTPs, form filling and choosing audio/video/text modes. Older patients commonly prefer audio/voice notes and younger users prefer chat/typing. Local health camps and bringing doctors to villages are effective trust-building steps before digital adoption. Once trust is established, digital platforms are better received.

Ms. Ataiya Bano (from Rajasthan) works as a health facilitator and information entrepreneur and helps people access teleconsultations and navigates platform processes on the ground. She reiterated that human intermediaries are essential for trust and navigation. These roles also provide local livelihoods and can anchor digital health adoption.

As platformisation is accelerating in health, policies should ensure empathetic design, data privacy protections and integration with human support systems. Most of the primary care is preventive and informational. For this to be effective, these interventions need sustained local engagement.

Dr. Suruchi Kumari, Consultant, DEF, emphasised that trust remains a critical factor, with human intermediaries essential for bridging digital literacy and ensuring privacy.

Critiquing narrow definitions of inclusion, Dr. Ali Mehdi advocated for frameworks rooted in freedom, empowerment, and social context rather than mere service delivery. He argued that “inclusion” needs reconceptualising. The goal should be whether technologies and interventions expand people’s freedoms (social, economic, political), not merely whether they have a device.

Dr. Mehdi urged evaluators to measure impact in terms of freedoms rather than device counts. Equality does not mean uniform provision as different groups require differentiated support to attain equivalent freedoms. He highlighted the role of social determinants (education, sanitation, dignity) in shaping health outcomes. Priority on education, awareness and health promotion are foundational to improve health outcomes for marginalised groups.

Prof. Amitabh Kundu underscored the necessity of human intervention alongside digital tools, warning of cybersecurity and privacy risks inherent in health platformisation. He emphasised the empirical rigour of CDPP’s research.

Adoption of digital health is high among many segments but uneven across age, education, caste and religion. Infrastructure connectivity and technological devices must be paired with digital literacy, language access and human mediation to convert access into meaningful use. Local intermediary models like Suchana entrepreneurs, DEF centres, CSCs, etc., are critical both for uptake and for local livelihoods. Policies should support and scale these models and should move beyond device distribution to enhance freedoms and dignity and enable local environments.

The panel emphasised that trust in local health intermediaries often outweighs trust in institutions. Privacy fears especially among Muslims and Christians emerged as key barriers, highlighting the importance of qualitative insights in policy design.

Treat digital health access as infrastructure and a public good rather than a charity. The panel recommended that embed functional digital literacy into community health programmes forms, OTP, teleconsultation skills. Design platforms to be multilingual, culturally sensitive, and accessible across literacy levels. Enforce privacy protections, transparent grievance redress, and community accountability mechanisms. Adopt intersectional policy design targeted at ST, SC, Muslim communities, elderly users, and women with tailored interventions.

The session concluded that while digital health has transformative potential, it must be paired with culturally sensitive community engagement, inclusive infrastructure, and strong privacy safeguards. CDPP’s publication stands as a significant contribution, offering evidence-based pathways to dismantle digital divides shaped by gender, caste, and class.

KSPP Workshop: Emerging Technology, Inclusivity, and Regulation

S. Vishnu Pillai
Assistant Professor
KSPP

Prof. Vishnu Pillai opened the workshop by positioning himself as a policy practitioner, not a computer scientist or data analyst, and explained that his approach is shaped by public policy concerns and grounded in empirical references. He set three workshop aims:

- Clarify what “AI/emerging technology” means for public policy.
- Surface the likely social impacts: who wins, who loses; and
- Discuss regulatory approaches that reduce harm without killing useful innovation.

1. Framing: Emerging Technology and the “Pacing Problem”

Prof. Pillai began by defining a recurring feature of emerging technologies: radical novelty combined with rapid, industry-driven adoption. He introduced the pacing problem—the idea that regulation typically cannot keep up with the speed of technological change—and said this is the fundamental governance challenge for AI today.

He argued that public policy must therefore focus less on perfect technical definitions and more on the risks and systemic effects that technologies generate. To guide this, he proposed adopting risk-based, descriptive approaches (similar to the EU’s risk framework) rather than trying to pin down a single, static definition of “AI.”

2. What Is AI?: Usefulness and Limits of Definitions

Prof. Pillai reviewed engineering definitions (e.g., “science and engineering of making intelligent machines”) and noted their limited utility for policy. He pointed out that “intelligence” and “autonomy” are subjective and shifting. What counted as “intelligent” in past decades (chess programmes, Go systems) is now routine; hence, definitions are moving goalposts. Rather than debating semantics, he proposed the “law of the horses”: observe behaviour and risks in context rather than insist on opening every system up. This supports a risk-based regulatory stance. He used everyday examples to make the idea concrete: Do we call a washing machine “autonomous”? Some would, some would not. The point: definitions matter less than the functions, effects, and foreseeable risks.

3. Motivation: Lived Experience, Jobs, and Research Angles

Prof. Pillai described his five years working in construction. He reflected on hopes and fears about automation (robots replacing hazardous manual labour), and how those hopes led him into public policy research: two papers—one on AI regulation in construction (Science and Public Policy) and another on AI’s impact on the “three Rs” (Reviewers, Respondents, Researchers). He emphasised that impact is not uniform: workers with low horizontal and vertical mobility (e.g., helpers, welders, “kalassis”) face higher displacement risk than those with transferable or higher qualifications.

4. The AI Spectrum: Productivity vs. Complexity

Prof. Pillai introduced a practical spectrum from rule-based systems (RBS) on the left to deep-learning neural networks on the right. Moving right tends to increase productivity and accuracy, but it also increases complexity and reduces transparency. He deliberately kept the boundary undefined— “somewhere here is AI”—to focus participants on governance consequences rather than taxonomy. Policy choices alter where systems sit on this spectrum; markets will push towards higher performance (rightwards), but that brings governance challenges.

5. Complexity and Coupling: Core Workshop Framework

- Complexity: the degree of unforeseeability—situations or interactions you cannot fully anticipate. When you lack sufficient information to predict outcomes, the system is complex.
- Coupling: how tightly linked system elements are. High coupling means little buffer between failures—there is little time or space for manual intervention.
- Prof. Pillai drew a 2×2 matrix (quadrants) with complexity increasing left to right and coupling increasing bottom to top. Examples he mapped:
 - (a) Nuclear power plants are high-complexity and tightly coupled which leads to high-risk systems (Chernobyl is used as an illustration of tight coupling producing cascade failures).
 - (b) Universities: less tightly coupled, lower immediate risk (more buffer, more human contingency).
 - (c) Mining: highly complex but more loosely coupled (automated mining vs. flexible schedules).
 - (d) Construction (today): highly complex and moderately coupled—but AI/automation can push it into the tightly coupled, high-risk quadrant (e.g., automated excavators, automated pour/assembly lines). When that shift occurs, the likelihood of systemic accidents increases.

Prof. Pillai linked this to Charles Perrow’s Normal Accident Theory and contrasted it with the High Reliability Organisation (HRO) literature: some organisations maintain high reliability despite complexity through specific practices; our regulatory aim should be enabling systems to become HROs where possible.

Prof. Pillai also explained

units → parts → subsystems → system architecture

and introduced engineering safety devices (ESDs) between parts and subsystems: technological fixes are useful but limited—they address component-level failures, not systemic, emergent behaviour.

6. Risk Perception, Bounded Rationality, and Incidents

Drawing on Herbert Simon’s bounded rationality, Prof. Pillai discussed differential risk perception: people react more strongly to rare, visible failures (an autonomous car killing someone) than to frequent but diffuse harms (road deaths). He used the Arizona autonomous vehicle fatality (Uber testing) as an example: public outcry, shutdown, and regulatory anxiety

were disproportionate relative to other risks—because humans are poor at probabilistic thinking and risk framing matters.

Liability issues were raised: who is responsible when an automated system fails? He noted that Volvo safety systems had been removed in Uber's case, introducing layers of responsibility (vehicle maker, system integrator, operator, software developer).

7. Privacy Concerns: Retention, Repurposing, Spillover

Prof. Vishnu Pillai summarised three core privacy worries:

- Retention: how long is personal data stored?
- Repurposing: Will the data collected for one purpose be used for another (e.g., scooter location data used by insurers)?
- Spillover: data collected without a subject's awareness (e.g., from a camera in a public cafe).

He tied these to the *DPDP Act*, arguing that it addresses many of these concerns, and raised concrete examples (biometric systems in universities and worries about how biometric data might later be used to monitor or train systems).

8. Victim-group Classification (workshop activity & governance implication)

Prof. Pillai introduced a four-tier victim (impact) classification: a practical tool for regulatory prioritisation. He explained it, gave examples, and used it as the basis for an activity.

The four groups:

- Victim Group 1 (Operators/data fiduciaries): People who operate or are directly responsible for systems and are aware of risks (e.g., driver of a vehicle, the company controlling the data). They share benefits and bear immediate risk.
- Victim Group 2 (Direct beneficiaries/users): People who use the service and accept some risk for benefit (e.g., a passenger).
- Victim Group 3 (Innocent bystanders / third parties): People who are impacted without direct involvement (e.g., a pedestrian struck by an autonomous car; a neighbour whose data is collected).
- Victim Group 4 (Future generations/long-tail victims): People not currently present—e.g., those affected by environmental or intergenerational harms (radiation, climate, long-term data misuse).

Regulatory implication: The more likely the impact is to reach victim groups 3 and 4, the stronger the regulatory response should be. Prof. Pillai noted that *DPDP* and other frameworks tend to be stricter when third and future-generation harms are likely.

9. Policy Tools (Christopher Hood's N-A-T-O framework)

Prof. Pillai introduced Christopher Hood's policy toolkit (often stylised as NATO): Nodality (information), Authority, Treasure, Organisation, and explained how different instruments fit the AI governance problem:

- Nodality/Information tools: Awareness campaigns, public information, transparency obligations.
- Authority tools: Command-and-control regulation, standards, penalties (e.g., DPDP enforcement). Prof. Pillai cautioned that heavy-handed authority tools can “kill innovation.”
- Treasure tools: Taxes, subsidies, incentives (e.g., tax incentives for “safe AI,” or AI taxation redirected to upskilling displaced workers).
- Organisation tools: Government internal reforms and provision (public sector adoption, institutional capacity building).

The speaker emphasised policy mixes: combining information, incentives, and regulation often yields better results than any single instrument. The example of mandatory CSR (*Companies Act*) was used to illustrate how making something mandatory can change behaviour, but also risk stifling innovation in programme design.

10. Workshop Activity: Mapping Systems to the Complexity-Coupling Matrix

Prof. Pillai ran an interactive exercise asking participants to place their sector/systems on the complexity-coupling matrix and to speculate how AI might shift those positions. Groups discussed examples (health, education, research, university administration, construction).

- Education/university assessment: Historically loosely coupled; introduction of AI detection tools and automated grading increases coupling and complexity (false positives, opaque “black-box” models). Using Turnitin.ai and other detection tools can create tighter coupling (automatic pass/fail judgments) unless human review is preserved (human-in-the-loop).
- UPI/payments (voice recognition example): Voice-based UPI is preferred by some (slower, allows reversal); app-based flows can be tightly coupled (instant send). OTPs are an example of an “uncoupling” intervening step.
- HR and CV screening: Automated pre-screening saves time but risks embedding existing gender or caste biases; human review reduces coupling and bias risk.
- Construction: automation (automated excavators, concrete pourers) can shift construction from moderately coupled to tightly coupled - increasing systemic risks.

Participants recognised that policy responses should aim to reintroduce buffers (manual checkpoints, OTPs, human oversight) or design transparent monitoring to avoid brittle, high-coupling systems.

11. Impact Groups and Employment Dynamics

Prof. Pillai emphasised that job-impact analyses must go beyond headline numbers. He highlighted research findings on:

- Horizontal and vertical mobility: Construction helpers lack both; they cannot easily move horizontally to another sector or vertically to managerial roles, making them highly vulnerable to automation.
- Research sector: Mechanical tasks in qualitative research (transcription, coding) are automatable, but researchers and analysts gain time for higher-value tasks. The total job impact varies by sector: in some sectors, new AI jobs are high-skill and limited; in others, net job loss may be large (quantity vs. quality).

- Marginalised communities: He raised the special vulnerability of queer and gender-diverse people who rely on precarious, local jobs—displacement is not merely economic but life—altering (e.g., loss of rent, gender-affirming care). He also drew attention to annotation/label-work labour conditions (12–15-hour days, low pay), where marginalised workers are training systems that may later displace them.

Prof. Pillai argued for targeted policy measures (subsidies, retraining, careful design of tax/subsidy schemes) to both reduce harm and improve the inclusivity of transitions.

12. Transparency, Liability and Fairness (technical vs. practical transparency)

When asked about transparency, Prof. Pillai distinguished three useful forms for policy purposes:

- Model transparency (internal mechanics): Often impractical for policymakers to demand (black box complexity).
- Training transparency (data provenance, training sets): Policy-relevant for discrimination and fairness assessments.
- Testing transparency (performance, error rates across groups): Crucial for liability and regulatory decisions.

He stressed that for civil liability and discrimination cases, training and testing transparency are often sufficient; opening the model internals is usually unnecessary and impractical.

13. Film Analogy and Closing Reflections

Prof. Vishnu Pillai used the film *Arrival* as an allegory: the arrival of powerful new technologies can be misread as an existential threat or as an opportunity to learn new “languages.” The key questions are: what is the system’s intention (benign vs. malicious), and what is its timeline? He said he is less interested in far-future singularity debates and more focused on the next 10–15 years, where policy choices will matter for present lives.

The speaker reiterated that the workshop aimed to equip participants with practical analytic lenses (complexity/coupling, victim groups, NATO policy tools) rather than abstract technical details. He urged attendees to:

- avoid technological fatalism;
- treat AI as an instrument whose social shape depends on governance choices; and
- keep the focus on people most likely to suffer harm.

Prof. Pillai closed with a pragmatic note: focus on the next 10–15 years, design policies now that protect vulnerable groups, and create governance that allows beneficial innovation to flourish without enabling systemic harm. He closed by reiterating his starting position: AI and emerging technologies can solve many human problems, if governed carefully.

Panel 3: Policy, Governance, and Global Perspectives

Chair: Prof. Abdul Shaban, Professor and Chairperson, Centre for Public Policy, Habitat and Human Development, School of Development Studies, TISS, Mumbai

Panellists:

- Ms. Nandini Chami, Deputy Director and Fellow, IT for Change
- Dr. Priya Hasan, Assistant Professor, Department of Physics, Maulana Azad National Urdu University (MANUU)
- Prof. Ipsita Sapra, Associate Professor, School of Public Policy and Governance, TISS (H)
- Mr. Tom Dawkins, Co-Founder/Entrepreneur-in-Residence, Startsomegood

The Chair and moderator for the panel, Prof. Abdul Shaban, began the panel by discussing how in many colonised and transitional contexts, institutions remain uneven in strength and accessibility. Wage gaps persist across the Global North and South, with significant and uneven inequalities between men and women. The rise of digital economies and AI may shift who benefits from growth and who bears the costs. The discussion seeks to illuminate how policy and governance can drive inclusive prosperity. The panel discussed the intersections of digital transformation, education, and public policy with gender equity, and how global perspectives can inform more equitable approaches. Despite ongoing challenges, evidence-based action can advance accessibility, affordability, and shared prosperity for all.

Ms. Nandini Chami discussed the different uses of internet and inequality in the digital space. She described the “connectivity paradox”: improved access which does not automatically yield equitable, productive use across genders and regions. Inequality exists both online and offline as not all online users engage equally. Some women or gender minorities use the internet actively and productively, while others passively communicate data or are effectively side-lined. She emphasised the need to frame sessions around how different patterns of internet use affect voice, agency, and opportunity. A pertinent question raised by her was whether the internet helps girls and gender minorities voice their concerns in reality? This highlighted barriers from corporate walls and “diversity politics” that can stall genuine voices, with examples like *rainbow capitalism* and content moderation decisions. Women’s livelihoods in the Global South, especially MSMEs in retail, are being transformed by e-commerce, often with market-driven constraints (fees, platform policies, etc.). Policy is being treated as a product of Policy Push (PP) which calls for genuine digital multi-stakeholder governance. Macro-digital trade frameworks can enable neo-colonial revenue dynamics and digital public infrastructures which should be democratically controlled, and community led.

Criticising technocratic “*solutionism*” and quick-fix approaches, Ms. Chami cautioned against race-to-market dynamics that overlook social problems. She suggested reimagining the digital arc away from exploitation: reclaiming agency over data, privacy, and behavioural nudging. She strongly advocated for empowering women through policy and community-driven digital infrastructure, while balancing the roles of public and private sectors in shaping equitable tech ecosystems.

Prof. Ipsita Sapra, started her talk by sharing a case study on a Mobile Health (mHealth) initiative by some of her students from the Tata Institute of Social Sciences, Hyderabad (TISS-H). The project shared the empirical data from the PM Rural Fellowship programme (2014–2015) led by

Prof. Shankar Datta, where the students worked in remote, conflict-prone districts to address development deficits and material costs of conflict. She brought to everyone's attention that the students sought tech-based solutions for social problems, but the ideas did not turn out as expected, prompting learning about implementation challenges. A major drawback of the mHealth initiative in Mandla district, Madhya Pradesh, was the mismatch between the solution without clear understanding of the problem. The tribal women were facing high maternal health risks; and the team built a solution that sent immunisation and supplement reminders via feature phones, coordinating with ICDS (Anganwadi or AWW) workers and Accredited Social Health Activists (ASHAs) staff. They failed to anticipate that these women did not own or have access to smartphones, which blocked adoption completely at the outset. After evaluation, they also found out that privacy concerns and desire for platform transparency hindered use.

The intersection of technology and society emphasised that no amount of economic data could fully capture sociocultural dynamics; policy is expected to be sensitive to these contexts to leverage tech for women's issues. Prof. Sapra cautioned that tech interventions have unintended consequences which may not close gender gaps in mobile ownership or transform lives uniformly. Post-Covid, online education offered flexibility and new work arrangements for women, but anthropological studies revealed that there was potential reduction in women's public presence in turn narrowing her social networks. Mobile devices were designed without gender considerations, and that uptake of contraception and other health tech are shaped by deep sociocultural factors beyond pure science. She mentioned that social media dynamics can both empower as well as harass women, giving the example of women politicians such as Mahua Moitra; who went through gendered trolling and sexist responses illustrating tech's double-edged nature. The speaker stressed the need for careful, nuanced approaches rather than assuming tech alone solves gender issues. Referencing Amartya Sen's insight, she quoted that, "tech cannot fully address systemic gendered inequities without addressing broader social determinants."

Mr. Tom Dawkins started by sharing an argument that technology has the potential to democratise voice and participation, but outcomes depend on who controls and for what end. He questioned whether technologies like the internet and AI truly empower the marginalised or end up reinforcing existing power structures. He noted that radios and the internet were once framed as universally democratic, but in practice they often silo or amplify conflicts rather than resolve them. He shared his observations that AI can amplify excluded voices, yet power holders may still dominate platforms, APIs, and monetisation. "Digital Wealth" and "Platform Power" concentrate advantages among a few, while underinvested communities remain behind. He emphasised on the risk of surveillance capitalism and the need for policy that distributes knowledge and opportunity more equitably. Critiqued current investment ecosystems as gender- and race-biased, with few new entrants and persistent dominance by established groups. He suggested building an ecosystem that nurtures lived-experience innovators (e.g., refugee women, grassroots founders) and connects them to global networks. He called for reimagined investment models that empower underrepresented founders, with rigorous due diligence that prioritises community needs while reminding that technology itself is neutral; governance, policy, and who decides matters most for equitable outcomes.

Dr. Priya Hasan highlighted the underrepresentation of women in Science, Technology, Engineering, and Mathematics (STEM). Women are highly underrepresented in STEM, especially in physics and astronomy (global <30%, with astronomy/physics closer to 50%), while life

sciences and math show relatively better representation. Indian Institute of Technology (IIT) and other major science institutions show very low female presence in leadership (less than 15% faculty in top institutes; ISRO women under 20%; leadership roles and director positions largely male; no woman director at IISc/IISERs as cited).

Early marriage, family expectations, lack of mentors, biased recruitment panel decisions favouring men, and “leaky pipeline” from UG or PG to leadership roles define the future course of women in top management roles. Programmes by the Government of India, like Gender Advancement for Transforming Institutions (GATI) is a pilot project of the Department of Science and Technology (DST) under the Women in Science and Engineering (WISE) KIRAN division have been developed and implemented for gender equity in STEM. WISE-KIRAN itself aims to advance women, plus a national database and 30% reservations, but outcomes remain limited; outreach and role models for younger girls are still weak. The problem is deep rooted in mindsets and socioeconomic factors rather than technology itself; addressing governance and culture is essential to improve women’s participation in science and tech.

The Chair anchored the discussion around various strands highlighted by speakers like Prof. Sapra’s emphasis on urgent, systemic gender and technology issues in policy and governance, and Dr. Hasan’s identification of sociocultural challenges of women’s representation. The Chair noted Mr. Dawkin’s point that, while technology can aid engagement with population and environmental concerns, moral considerations cannot be solved by technology alone; he argued that technology can amplify issues like population growth and carrying capacity of a nation, but ethical constraints and limits to our understanding must guide our applications. In short, the Chair underscored that moral and societal dimension, rather than purely technical fixes, are central to addressing policy, governance, and gendered impacts in the discourse. Technology alone cannot resolve deeply rooted gender inequities or socioeconomic disparities. Mindsets, cultural norms, and structural barriers must be addressed alongside policy and governance. There was consensus that inclusive, community-led governance and equitable access to digital infrastructure are essential, not just advanced technology. The Chair reinforced this by highlighting the moral and societal dimensions as central to policy outcomes, matching the panellist’s calls for policy, governance, and contextual understanding over technocratic fixes.

Some argued for stronger, more concrete institutional reforms as pivotal, whereas others warned against over-reliance on policy without changing cultural mindsets. There was also debate about the role of technology itself: some speakers warned of technology reinforcing power imbalances or moral limits to technology’s reach, while others saw potential for technology to empower marginalised groups if deployed with ethical considerations and inclusive design. The Chair’s framing aligned with moral and societal considerations, but the degree to which policy levers alone versus cultural change should drive reform, remained a point of contention.

During the Q&A session, implementation of the MeToo movement was discussed and the expert’s opinions were sought after. The speakers were asked to share their experiences beyond the current Indian context and asked to share global perspective on gender and technology. The issue of gender and inclusion requires actionable, structured policy recommendations and a specific institution responsible for implementing them.

Responding to questions around women in the workforce, speakers cited statistics on participation post-PhD (75% of PhD women not in workforce) and 2011 census data showing high graduation rates but social barriers to work; pointed to wage gaps (women earning about one-third of men) and low testing facilities and health-service discrimination against women. They warned against overreliance on statistics for policy, suggesting principles and practice that should drive action, not numbers alone. The discussion was left open-ended with the question of whether we are too late to act on AI (curative stage) or if there remains space for preventive, proactive frameworks to shape outcomes in the tech space.

DEF Technical Session: Beyond the Binary—Rethinking the Gender Digital Divide

Moderator: Dr. Raina Ghosh, Researcher, Research and Advocacy Division, Digital Empowerment Foundation (DEF)

Panellists:

- Ms. Grace Banu, Founder-Director, Trans Rights Now Collective
- Mx. Koyel Ghosh, Managing Trustee, Sappho for Equality

The session examined the gender digital divide through the lived experiences of trans, non-binary, caste-oppressed, and religious minority communities in India. Discussions interrogated how digital identity systems, state documentation, healthcare, and employment frameworks reinforce exclusionary binaries and perpetuate systemic marginalisation.

Opening with a short documentary that posed the question “Whose citizenship counts?”, the panel underscored that while the digital divide is increasingly acknowledged, dominant approaches often fail to account for those excluded at the intersections of caste, religion, and gender identity.

Panellists detailed how state systems from ID cards to job applications actively erase or invalidate trans lives, and called for intersectional, inclusive reforms.

Ms. Grace Banu, Founder-Director, Trans Rights Now Collective, began her discussion by talking about the systemic exclusion in healthcare, employment, and documentation. Trans people are frequently treated as experimental subjects rather than patients. Even in states with trans-specific facilities, such as Kerala and Karnataka, surgeries are often conducted without ethical oversight.

Obtaining official identity documents is especially difficult in rural areas. The required medical validation often involves casteist, patriarchal, and transphobic gatekeeping, sometimes resulting in denial of services and deaths. The processes such as Form 6A, police inquiries, and district magistrate sign-offs are invasive and humiliating. Even in Tamil Nadu, known for trans welfare schemes, administrative barriers persist.

Few employers hire trans persons, and those transitioning in the workplace often face denial of pronoun respect, name changes, and access to inclusive facilities. Housing discrimination is common. Funding is often denied to trans entrepreneurs, who are viewed as “high risk.” The pandemic exacerbated violence against trans youth, including conversion therapy and sexual abuse, particularly among rural and caste-oppressed individuals. She recommended that documentation processes should be simplified, provide ethical and accessible healthcare, and abolish surveillance-based recognition systems to enable dignity and inclusion.

Mx. Koyel Ghosh spoke about the legal frameworks, documentation, and digital discrimination. Despite the NALSA 2014 ruling enabling self-identification, the *Trans Act 2019* enforces binaries through requirements for gender certificates (Section 5) and surgical proof for binary IDs (Section 6).

Some companies, such as Tata Steel, require gender-affirming surgery to update employee records. Pension and parental rights are frequently denied. Misgendering and ID mismatches have led to detention under NRC protocols, with lethal consequences for trans persons.

There is no anti-discrimination law for queer-trans individuals, leaving them vulnerable to violence both offline and on digital platforms. Legal penalties for violence against QT bodies remain weaker than those for cis women.

The panel recommended the establishment of inclusive anti-discrimination laws, dismantling binary legal systems, and ensuring recognition without medical or surgical mandates.

The panel had consensus on the exclusionary nature of state systems across documentation, healthcare, and employment. There is an urgent need for anti-discrimination legislation and the dismantling of binary, medicalised frameworks. The recognition of how caste, geography, and class intersect with gender will give a deeper lens of marginalisation.

The panel recommended to remove medical and surgical requirements for legal gender recognition. Trans-inclusive anti-discrimination laws should be applicable both online and offline. Documentation across Aadhaar, PAN, ration cards, and educational certificates can be streamlined. Non-exploitative healthcare will ensure that it is ethical care. Identity processes should be decentralised to be accessible for rural and caste-oppressed trans persons. Funding and protections should be provided for trans entrepreneurs. Enforce workplace rights, including pronoun use, name recognition, and access to safe facilities and address digital misgendering, erasure, and data violations.

The panel delivered a compelling critique of India's digital and bureaucratic systems, revealing how they perpetuate violence and exclusion against trans and queer communities. Until policy, legal, and digital infrastructures are restructured through anti-discriminatory, non-binary, and caste-conscious frameworks, digital inclusion will remain deeply inequitable.

Vote of Thanks

Rashad Ullah Khan

Senior Research Fellow

Centre for Development Policy Practice

Concluding the conference, Mr. Rashad Ullah Khan gave a reflective vote of thanks, expressing appreciation to all participants and partners for their contributions. He shared a personal takeaway from the day's proceedings—that patriarchal structures are deeply embedded in both technology and society, a reality sustained by the lack of active political will to bring about change. Those responsible for creating these inequalities, he stressed, must also be the ones to implement solutions. Without targeted policy interventions to address historical gender imbalances, technology will continue to be perceived as the source of such problems.

Mr. Khan announced the theme for 2026 Gender & Inclusion Conference: “Health and Meaningful Access: Data and Platformisation” which will examine the growing dominance and pervasiveness of digital platforms in the health sector and their socioeconomic impacts, especially in relation to gender, caste, and class. He highlighted that current health policy approaches often adopt a technocratic stance, reducing gender to binary, measurable factors and failing to address the social dynamics driving inequality.

He also extended an open invitation to the upcoming Digital Citizenship Summit on November 14–15, 2025, at T-Hub, themed “People and Platforms: Let’s Talk Accountability.”

Abstracts of Papers Presented on Day 1 of the Conference

Paper Presentation: Session 1
*Bridging the Digital Divide: Advancing Gender Equity and
Social Empowerment Through Digital Tools*

**App-based Co-living Student Housing Technologies: Gendered Experiences
of Loneliness and Friendship in a City**

Prof. Rukmini Sen

Professor, Sociology

Dr. B. R. Ambedkar University, Delhi

Gunjari Bhattacharya

PhD Scholar, School of Liberal Studies

Dr. B. R. Ambedkar University Delhi

Abstract

According to a survey conducted in 2019, by an international property consultant Knight Frank, 22% of millennials in the age group of 18-23 gave co-living spaces a preference and 55% of the respondents between 18-35 were willing to rent co-living spaces. Easy access and reasonably priced accommodation was the reason for the rising popularity of co-living spaces. According to Colliers International Report, 15-20% of students are preferring alternative living facilities over hostels and PGs in the Delhi NCR region. From the early years in 2015, when promoting a co-living brand meant clarifying that it is not about men and women living together; these spaces, especially among educational hubs in various cities, are likely to increase and become the social reality. Such spaces are likely to be the future of living as they allow for an exciting and hassle-free way of being grounded and yet agile, enabling privacy and yet creating communities.

This paper is a study on these app-based co-living student housing technologies, trying to understand their genesis and the kind of services that they provide. By doing a digital ethnography of the websites of these companies providing co-living services like Stanza Living, Zolo Stays, and Your-Space, the attempt will be to assess how these websites claim that they help students select, manage, and adapt to their living spaces. These technologies automate rent payments, maintenance, and service requests, while also contributing to a sense of autonomy and convenience. Therefore, making the lives of the students convenient and hassle-free.

Together with understanding the app-based services that these co-living spaces provide, this paper will also examine gendered patterns in residential preferences and friendship-building, uncovering the different ways students of different genders seek comfort, safety and support. Arriving at a new city, away from home, for the purpose of education, is a major transformation in a young adult's life. This process of navigating the new city is both empowering and isolating at the same time. This paper intends to explore how young student migrants recreate home-like environments and supports in an unfamiliar city using both physical space and digital tools.

Beyond Access: Digital Financial Inclusion and the Role of Self-Help Groups in Hathiyakandh, Bihar

Ritu Kumari
Junior Manager
Gram Vikas, Odisha

Abstract

In recent years, the Indian government has promoted financial inclusion through initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) and digital payment systems. While NFHS-5 data shows increased bank account ownership among women, actual use of digital financial tools remains low. This study explores the challenges rural women face in using digital financial services and examines the role of Self-Help Groups (SHGs) in supporting digital financial literacy.

Fieldwork was conducted in Hathiyakandh Panchayat of Danapur Block, Patna District, Bihar, through qualitative interviews with 20 SHG members, 6 non-SHG women, and 2 BRLPS officials. While 23 of 26 women owned mobile phones, only 2 used smartphones for financial transactions. Most used phones for calling or entertainment. Key barriers included limited digital literacy, lack of smartphone access, illiteracy, and fear of fraud. Women preferred Customer Service Points (CSPs), especially those operated by known female agents (Bank Sakhis), due to higher trust.

SHGs facilitated savings and bookkeeping but did not significantly enhance digital financial skills. BRLPS support focused only on select members. The study recommends integrating structured digital training, expanding smartphone access, and building trust to empower women. Strengthening digital capabilities within SHGs is vital for inclusive, secure financial participation.

From Access to Agency: Understanding What Builds Women’s Trust in Digital Spaces in Odisha

Meghna Sandhir

Programme Officer

PRIA, New Delhi

Rabi Raj

Senior Programme Officer (Research)

PRIA, New Delhi

Abstract

The present paper delves into the complex dynamics shaping women’s trust in digital platforms, focusing on the interplay of socioeconomic, cultural, and technological factors in Odisha, India. Using participatory research methods—including Focus Group Discussions (FGDs), Participatory Vulnerability Assessments (PVAs), and Key Informant Interviews (KIIs)—the study identifies key drivers and barriers to women’s digital engagement. Findings indicate that increased smartphone access, especially during the COVID-19 pandemic, has facilitated women’s entry into digital spaces. However, this access is often mediated by patriarchal norms that restrict women’s autonomy in using digital technologies.

Frontline workers and community-based initiatives, such as Self-Help Groups (SHGs), emerge as critical digital confidence enablers, offering practical support and sociocultural validation. Despite these positive developments, persistent challenges, such as online harassment, privacy concerns, inadequate digital literacy, and economic constraints related to device and data costs, continue to hinder trust and sustained engagement.

The paper proposes a multi-pronged approach, integrating targeted digital literacy programmes with economic empowerment initiatives to strengthen women’s digital agency. Enhancing infrastructure and embedding gender-sensitive design into digital platforms are identified as essential for creating inclusive and safe digital environments. Grounded in adult learning principles, feminist theory, and intersectionality, this research contributes to the discourse on digital feminism by offering actionable insights for policymakers and practitioners. It underscores the transformative potential of digital platforms in challenging patriarchal structures and advancing gender equity. Ultimately, building trust in digital platforms necessitates addressing both structural barriers and individual capabilities, enabling women to leverage digital technologies for empowerment and social change fully.

Gender & Digital Financial Inclusion: The Case Study of Digital Budget Rani

Zoe Kennedy-Hughes

*Chief Research and Development Officer
Yugantar*

Navika Harshe

*Monitoring & Evaluation Lead
Yugantar*

Tejaswini Madabhushi

*Chief Executive Officer
Yugantar*

Abstract

This paper examines the implementation and impact of a digital financial inclusion initiative aimed at training marginalised women in India in Telangana in the use of Unified Payments Interface (UPI) technologies, including app-based methods and the 123PAY IVR system. Using the data from training sessions with 40,552 women, as well as qualitative insights from field staff and participants, the study highlights barriers to digital adoption, including low digital literacy, restrictive gender norms, and technical failures. The initiative found that, despite the widespread access to smartphones, many women preferred IVR-based methods due to their trust-enhancing features and lower risk of error. Key findings highlight the importance of user-centred design, trust-building mechanisms, reliable technology, and supportive institutional collaborations. The paper argues that inclusive technology design and sustained policy support are required to bridge the gender digital divide and advance financial inclusion for underserved communities.

Gendered Margins: Lived Experiences of Women in Institutional Housekeeping Roles

Sadaf Siddiqui

PhD Student

Maulana Azad National Urdu University, Hyderabad

Dr. K. M. Ziyuddin

Associate Professor

Maulana Azad National Urdu University, Hyderabad

Abstract

The study examines the lived experiences, problems, and mobility of women employed as housekeeping workers in institutional settings, specifically emphasising the educational sector. It emphasizes the obstacles, adaptive strategies, and ambitions that influence their work and personal existence. Women in this field frequently contend with unstable working conditions, inadequate remuneration, insufficient job security, and restricted opportunities for advancement, exacerbated by societal expectations and gendered roles. It used qualitative data and participatory methods to record the narratives of structural inequalities experienced by the targeted respondents. The data reveals the presence of discrimination in the workplace, health risks, inadequate social protection, low wages, and the marginalisation of their labour within institutional hierarchies. The study highlights the necessity for policy reforms and inclusive frameworks that acknowledge and elevate the contributions of women in housekeeping positions by contextualising their experiences within the larger discourse of labour rights and gender equity. This research seeks to enhance comprehension of gendered labour dynamics, guide practical initiatives for equitable work conditions, and examine how inclusion can be brought while examining exclusionary processes in the institutional setup.

Paper Presentation: Session 2

Tools, Technology, and Economic Empowerment: Exploring Gendered Impacts of Emerging Innovations

Digitalisation in the Handicraft Clusters: A Case Study of Women Weavers in Tamil Nadu

Dr. Suruchi Kumari

Digital Empowerment Foundation

(Draft paper not for citation and circulation)

Abstract

In a globalising world, where goods production and consumption are abundant under large industries, in India, the story of the handloom and handicraft industry narrates the story of the uniqueness of craft, care and a labour-intensive economic sector. But over the years, there has been an outcry from the handloom and handicraft sector for the structural precarity plaguing the industry, leading to its unorganised nature, declining consumption, low wages and lack of integration in the thriving global market economy.

This study critically examines the interplay of gender, technology, and crafts through the programmatic intervention of the Digital Empowerment Foundation in the artisan clusters in Tamil Nadu. Using qualitative data from 3 such sites in (Nilgiris, Salem and Tirunvelli) the research showcases how digital support and the entrepreneurship skilling amongst women weavers and artisans can serve as a tool for empowerment, enhancing livelihoods and agency in the markets and in exploring the challenges, enablers and outcomes of the Digital cluster development model. Focus group discussions and interviews were conducted with various weavers, artisans, cooperative members to gain deeper insights on the intersections of women's labour, digital technology and its impact on bridging gender inequality. The study shows that if women weavers are provided with digital skill training, there is a chance that women entrepreneurs will scale their businesses. In the handicraft industry, there have been digital technological advancements from product designing and marketing to selling products online, and there has been a need for women weavers to acquire digital skills to participate in the market.

The study showed barriers to rural women's entrepreneurship regarding access, affordability, and skill training. Our findings underscore the role digital cluster development centres play in spreading digital knowledge and skills that are crucial in accelerating rural women's entrepreneurship in the handicraft industry. The vital role of internet connectivity, digital literacy, and skilling for building digital entrepreneurship in a challenging economy, improving community access to information and welfare services, and enhancing the effectiveness of digital entrepreneurship. The study also evaluates the central and state government policies for weavers and artisans to provide a framework for women-led enterprise development models by focusing on sustainable digital learning and training facilities for women entrepreneurs for inclusive development.

***Ghar-Baithe* Entrepreneurs: The Paradoxes of Digitally Mediated Entrepreneurship Among Muslim Women in Kolkata**

Alayka Aftab

PhD Scholar

*Centre for the Study of Social Systems
Jawaharlal Nehru University, New Delhi*

Abstract

This paper critically examines the digital entrepreneurial practices of Muslim women in Kolkata, foregrounding how intersecting structures of gender, religion, class, and digital inequality shape their experiences. Drawing on ethnographic fieldwork, it explores how women strategically mobilise digital platforms to generate income while negotiating cultural norms of respectability, spatial mobility, and patriarchal constraints. While digital entrepreneurship offers temporal flexibility and alignment with religious and familial expectations, access to its benefits remains contingent on the possession and conversion of various forms of capital—economic, cultural, social, and digital. The study highlights how inequalities manifest in algorithmic visibility, aesthetic norms, language barriers, and limited network access, often restricting market reach to co-religious networks and reinforcing communal boundaries. Through the lens of Bourdieu’s capital theory, the paper challenges celebratory discourses of digital empowerment, arguing that digital spaces frequently reproduce offline exclusions. It calls for a shift from technocentric models of inclusion to intersectional, equity-driven frameworks that recognise women’s agency while addressing structural barriers to participation in digital economies.

Ghost in the Machine: How AI Is Rewriting Gender Before We Notice

Arusha Gupta

*Associate Vice President & Head of HR
European Region, LTIMindtree*

Anand Rao

*Associate Vice President & Head
Europe, AI Services, LTIMindtree*

Divya Shashidhar

*Associate Director, People Analytics, HR
Europe, LTIMindtree*

Anna Abraham Mulamoottil

*People Strategy Lead, AI Services
Europe, LTIMindtree*

Abstract

It starts quietly. A CV filtered. A skill misread. A promotion missed. The HR system functions without a malicious actor present yet operates as algorithms perform its intended task. Or so we are told. The paper demonstrates how AI and automation technology is transforming workplace gender dynamics by changing HR value chain protocols and altering who remains visible within the workforce through algorithmic processes. Modern technologies which were once praised for equalising opportunities now actively participate in redefining those same opportunities. Marginalised communities who sit at the crossroads of social, linguistic, geographic, and economic barriers are among the first to feel the impact. AI systems, trained on biased datasets and deployed without adequate oversight, can reinforce exclusion under the guise of neutrality. They are unfolding now.

This paper examines the transformation of employment ecosystems through algorithmic governance and shows how technology does not eliminate gender bias but instead recasts it as objective. Drawing on cross-regional experiences from corporate, technology, and community settings, including grassroots digital empowerment efforts and AI deployments in HR, we examine how bias enters the system, how it replicates, and how it can be challenged. To identify systemic bias in AI-powered HR tools, this paper introduces the “Bias Before Deployment” framework, a pre-deployment diagnostic. It advocates for regulatory foresight, institutional accountability, and inclusive design before systems go live.

Politics of the Digital Body: Gendered Subjectivity in Online Sexuality Education in India

Annika Amber

University of Hyderabad, Telangana

Abstract

The politics of the digital body emerges through a complex interplay of visibility, vulnerability, and resistance. By tracing the experiences of sexuality educators, this paper shows how pedagogical interventions online are not merely acts of public education, but performances of gendered labour shaped by platform economies, cultural conservatism, and digital surveillance. On one hand, digital spaces offer access to knowledge and foster new modes of democratic and informal ways of learning. On the other hand, they also reproduce old hierarchies through structural issues of algorithmic moderation, trolling cultures, and the digital divide.

The digital body is visible through images as a projection of self online. Albeit the power of digital to afford anonymity, the body remains raced, gendered, sexualised, classed, and caste-marked. For sexuality educators, it becomes a terrain of epistemic struggle to reclaim authority over sexual knowledge even as their legitimacy is constantly questioned. Platform affordances such as blocking, reporting, or commenting reframe the educator's agency into negotiated labour, where feminist rhetoric of self-empowerment is co-opted and commodified by neoliberal logic of choice. This paper calls for a deeper rethinking of the digital pedagogy of sex. It looks at online sexuality education not just in terms of content delivery. It is an embodied, affective, and political practice that is inseparable from the digital infrastructures and economies through which it circulates. The digital body, in this view, is both a pedagogical tool and a political battleground.

Tracking Cycles, Trading Privacy? Menstrual Apps for Urban Women

Lubna Ludheen

Research Associate

Centre for Development Policy and Practice

Manisha Dhulipala

Senior Research Fellow

Centre for Development Policy and Practice

Abstract

The study aims to look at the availability, usability, and data practices of mobile health (mHealth) applications used for tracking menstruation and fertility, with a focus on urban Indian women. Although such applications are widely used in high-income countries, they are now gaining traction in India, especially across Tier-1 cities. The study analyses five widely-used menstrual tracking apps—Clue, Flo, Period Tracker, Maya, and Meiyou—to understand user preferences, functionality, and concerns related to digital privacy and safety.

Menstrual tracking apps have become a vital digital health tool around the world, particularly for women seeking to monitor their reproductive health. In 2024, a study conducted by Oxford University showed that Clue, Flo, and Period Tracker alone accounted for over 250 million downloads worldwide, indicating their widespread popularity. In India, the menstrual health app market was valued at USD 97.3 million in 2023 and is projected to reach USD 398.0 million by 2030, growing at a Compound Annual Growth Rate (CAGR) of 22.3% (Grand View Research, 2025). India contributed to 6.9% of the global market, making it the fastest-growing region for such apps in the Asia-Pacific.

Recent evidence suggests that despite this growth, persistent challenges remain in areas such as the accuracy of the application, digital literacy, and user privacy. Research conducted in 2023, involving 464 Indian women, revealed that 77.5% used menstrual tracking apps for cycle monitoring, 68.7% for general information, 39% for tracking symptoms or moods, and 20.9% for managing sexual activity (Nair et al., 2023). However, these apps are criticised for lacking scientific validation and for engaging in non-transparent data collection methods. These concerns are magnified in India, where an all-inclusive data protection framework is still lacking. The Internet Freedom Foundation (2022) highlighted that some Indian apps, such as Maya, have shared sensitive user data with third-party platforms without meaningful consent.

Paper Presentation: Session 3
Policy, Governance, and Global Perspectives

Ain't I a Digital Citizen? Illusion of Access Among Rural Women in India

Sarbani Banerjee Belur

*Visiting Assistant Professor
Department of Humanities and Social Sciences
BITS-Pilani, Hyderabad*

Tuisha Sircar

*PhD Researcher
Ashank Desai Centre for Policy Studies
Indian Institute of Technology Bombay*

Ananya Iyer

Independent Researcher

Abstract

The gender digital divide is an oft-discussed topic in the global literature on technology and society. It focuses mostly on access of women and girls to ICTs with little attention to the structures in the society that both obstruct and facilitate the engagement of women and girls with ICTs. These structures largely act as primary gatekeepers whose support and encouragement become important for most women's access to technology. The paper approaches the question of women's access to digital technology, i.e., smartphones in rural India and understands usage and adoption from the perspective of structures in the society like family, community, and state that obstructs and facilitates the engagement of women and girls with ICT in rural India.

To explore the issues, an empirical study adopting a mixed-methods approach was undertaken incorporating survey, in depth interviews, and case studies of SookhnaPreneurs of DEF to address digital inclusion and empowerment. A framework was developed illustrating key factors shaping women's ICT access and usage: age, literacy, education, household economy, social trust, and interpersonal relationships. These interconnected factors form a complex ecosystem influencing digital engagement of women.

The study found that while 88% of women had smartphones, over half, spent less than two hours online daily. Barriers were explored as reliance on others, gendered labour, financial dependence, and privacy concerns. ICTs enhance awareness and networks but rarely improve income or reduce workloads. Restrictive norms, digital literacy gaps, and connectivity issues were found to be limiting women's independent technology use.

Digital Governance and the Paradox of Transparency: Exclusions in the Public Distribution System Under the National Food Security Act in Gujarat

Vaani Tiwari

Project Coordinator, ANANDI

Abstract

The increasing use of digital technology in welfare governance in India has been projected as a robust solution to curbing corruption, particularly by eliminating intermediaries and ensuring direct access to entitlements. Launched in 2015, the Digital India initiative has been instrumental in pushing this transformation. However, this paper critically examines the consequences of digitisation on the accessibility of entitlements under the National Food Security Act (NFSA), 2013, with a specific focus on the Public Distribution System (PDS) in Gujarat. Drawing from qualitative data collected across two blocks in two districts of Gujarat, including interviews and analysis of written complaints, the study finds that digital technologies often shift the burden of ensuring transparency and accountability onto the very communities they are intended to serve. Despite claims of reduced leakages, the findings suggest a disjunction between official data and lived experiences of right holders. According to the 2022–2023 Household Consumption and Expenditure Survey (HCES), Gujarat has reduced PDS leakage from 51.7% in 2004–2005 to 40.3% in 2022–2023. The research highlights a pattern of digital manipulation where ration receipts falsely show full delivery of food grains, even in cases where vendors were penalised for corruption or where complaints were filed by rights holders for incomplete delivery. Such discrepancies indicate that technology, far from being a neutral tool, can be subverted to maintain existing patterns of exclusion while appearing transparent on paper.

Similarly, a World Bank study (Thommandaru et al., 2023) estimates a 10%–12% leakage reduction due to Aadhaar-based authentication. However, our field data from two wards each in 44 villages in Devgad Baria block in Dahod district revealed that 150 eligible individuals were excluded from receiving food grains due to the lack of Aadhaar cards, a mandatory requirement for availing PDS entitlements. Additionally, mechanisms like e-KYC and automatic silencing of ration cards have made access to entitlements increasingly likely to be denied, requiring beneficiaries to continuously prove their eligibility. As of April 2025, more than four lakh ration cards have been silent in Gujarat. In January 2025 alone, over one lakh ration cards of Priority Household category and another 1,551 Antyodaya ration cards were deleted in Gujarat. Interviews with stakeholders reveal that this automatised process not only disenfranchises the most marginalised communities but also turns the grievance redressal process into a burdensome exercise in self-surveillance.

The paper argues that while digitisation may streamline administrative processes, it often deepens exclusion and weakens accountability by making technological compliance a precondition for rights. Therefore, transparency via digital systems should not be conflated with the elimination of corruption unless accompanied by mechanisms that are sensitive to the socioeconomic realities of marginalised populations.

Gender Digital Divide and Educational Inequality: COVID-19 Impact on Muslim Secondary School Dropouts in India

Dr. Tuba Kamal

PhD, Economics

Prof. Asheref Illiyan

Professor

Department of Economics

Jamia Millia Islamia, New Delhi

Abstract

The prolonged school closures due to the COVID-19 pandemic led to a global educational crisis, affecting nearly 90% of students, with over 800 million girls being impacted. In India, about 320 million students were affected, including a significant number from marginalised communities such as Muslims. Against such a backdrop, it is relevant to examine the problems and difficulties encountered by Muslim students amidst the COVID-19 pandemic that compelled them to drop out of secondary school in India with special reference to northeast Delhi. This study used a quantitative technique and employed a multistage systematic random sampling method to collect 466 samples in northeast Delhi from May to December 2023. The data was analysed by using statistical techniques such as Descriptive Statistics, Principal Component Analysis (PCA), Reliability Analysis, Chi-Square test, etc. The main findings indicated that the COVID-19 crisis disproportionately affected females, with 78% of females dropping out of secondary school compared to only 21.8% males. Furthermore, the primary reasons for dropout among Muslim males were loss of parents' income followed by huge learning loss due to internet connectivity issues whereas Muslim females were more burdened with household chores, faced a gender digital divide, and early and forced marriage during the COVID-19 crisis. Thus, this study recommends that the government should provide monthly financial assistance, provide ICT training, and offer free digital devices and internet access to support continuing education and bridge the digital divide among marginalised Muslim students.

Locating the Most Marginalised Women in Digital Space: An Intersectional Approach

Manendra Kumar

Senior Research Associate

Giri Institute of Development Studies, Lucknow

Abstract

The paper aims to locate the most marginalised women in digital space and explore its driving factors by adopting an intersectional approach. The paper deals with access, availability, usage, digital skills, benefits, challenges, and experiences with regards to digital technology through a gendered lens. The other main purpose of the paper is to understand why some regions lag despite being part of a developed region and why such islands/anomalies exist on a regional scale. The study undertakes both qualitative and quantitative methods to achieve the objectives of the paper by analysing secondary data sources as well as by conducting a primary field survey in Nuh district of Haryana and Gopalganj district of Bihar by conducting a total of 314 individual interviews which constitutes details of 2197 household members too. The finding of the study indicates that women belonging to scheduled castes and scheduled tribes experience high levels of digital exclusion in comparison to other socioeconomic categories of gender. To combat digital exclusion among women we need to adopt an intersectional policy approach to target the most excluded women. A careful examination of social, political, and cultural context is required for the formulation of an inclusive gender-sensitive ICT policy.

The Gendered Labour Geographies in the E-Waste Chain: Exploring Policy Gaps and Ground Realities in India

Dr. Raina Ghosh

Digital Empowerment Foundation, New Delhi

Alfiya Azeem Khan

Digital Empowerment Foundation, New Delhi

Abstract

Historically, technology has been both a site of opportunity and a space of exclusion for women and marginalised genders, with systemic barriers limiting their access to and participation in technological fields (Wajcman, 2004). This paper explores the invisible and hazardous labour behind digital consumption in the Global South, particularly in the informal e-waste economy in India. Drawing on ethnographic fieldwork, including interviews, observations, and policy analysis, it reveals how women and gender minorities in this sector are excluded from formal recognition, labour protections, and environmental regulations. These workers often remain systematically disconnected from safe digital access, despite being integral to the digital technology lifecycle. The paper critically looks into the crucial yet underacknowledged role of these labourers and their exposure to health risks in unregulated environments. It also examines how policies like the E-Waste (Management) Rules, 2016, fail to address these labour precarity issues, particularly concerning gender, caste, and class. By exploring the intersections of identity and labour organisation in e-waste micro value chains (aggregation, segregation, and repairing), the research underscores how gendered labour dynamics shape variegated experiences of exploitation. The study calls for a gender-sensitive policy approach that integrates labour rights, environmental protections, and gender-inclusive frameworks. It advocates for a holistic understanding of digital justice that spans the entire lifecycle of digital technologies, ensuring that marginalised workers receive recognition and protection for their essential contributions to the digital economy.

Speakers Profile



Prof. Abdul Shaban, is the chairperson of the Centre for Public Policy, Tata Institute of Social Sciences (TISS). He has previously served as the chairperson of the International Relation Office (IRO), and Deputy Director of TISS, Tuljapur. His area of work relates to regional economic growth, cities, entrepreneurship, and creative industries. Prof. Shaban has been a member of various committees, commissions, and policy think tanks in these areas. He has also been a visiting professor/faculty at several leading universities, including LSE, Muenster University, Erasmus University, and Paris Diderot University (University Paris Cité).



Dr. Amitabh Kundu is a Professor Emeritus at L.J. University, Ahmedabad, a Visiting Professor at MANUU, Hyderabad, and a Trustee of Development Alternatives, Delhi. Formerly a Professor and Dean at JNU, he chaired key committees, including the Post-Sachar Evaluation, Diversity Index (Ministry of Minority Affairs), Housing Shortage Estimation (Urban Development), and Housing Start-Up (RBI).



Dr. Ali Mehdi is a global health researcher with 20 years of experience across Asia, Africa, Europe, and North America. He established and led ICRIER's Health Policy Initiative during 2014–22 and founded UHC360 in 2023 to promote health for all. His recent books include *Health Surveys in India: Review and Recommendations*; *Tracking and Tackling COVID-19: Global Perspectives* (Global Development Press); *Health of the Nation: Perspectives for a New India*; and *A Shot of Justice: Priority-setting for Addressing Child Mortality* (Oxford University Press). He is an International Practitioner Member, Faculty of Public Health, Royal Colleges of Physicians of the United Kingdom.



Dr. A. L. Sharada is a gender equality advocate and former CEO and current Trustee of Population First, a Mumbai-based social-impact organisation championing women's empowerment and gender-sensitive media campaigns like Laadli. With over 18 years in the development sector, she has led research, training, and policy initiatives across India, including faculty roles at Hyderabad University and IIHMR Jaipur, and consultancy work with UNICEF and UNFPA. Recognised for her leadership in media advocacy, Dr. Sharada also currently directs Green NGO of the Year efforts under the AMCHI vermicomposting project, enhancing sustainable livelihoods for women in tribal communities.



Ms. Divya Gaur leads the CEEW-Villgro Powering Livelihoods initiative at The Council. Her focus is to scale Decentralised Renewable Energy-based livelihood technologies through impact evidence, strategic partnerships, and gender-inclusive approaches at the national and state levels. Previously, she worked as a Social Impact Consultant and her work in impact measurement helped in enabling data-driven decision making for multiple CSRs and Foundations to amplify their on-ground impact.



Ms. Grace Banu is a Dalit and trans activist. India's first trans engineer, she is also a central member of the mobilisation and advocacy around the amendment of the Transgender Protection of Rights Bill. Ms. Banu vehemently argues for trans rights such as the right to paid leave during transition surgery just like paid maternity leave and speaks on various safeguards that must be initiated at workplaces and educational institutions to make them safe and welcoming to trans people. She stresses on the importance of reservations as part of affirmative action for transgender people. Founder of the Trans Rights Now Collective and CEO of Thirunangai Press, Grace's work speaks to the intersections of caste, gender, and technology.



Mr. Farhad Merchant, CEO of AKES, India, has over 30 years of diverse international experience across both the corporate and social sectors. After spending 17 years in the Corporate IT sector, he transitioned to the non-profit sector in 2008. Since then, he has led organisational change, focused on leadership development for social leaders, and worked to transform the lives of over 10 million children from low-income families globally with simple, contextual, and impactful educational solutions. An Aspire Circle Fellow, he serves on the Board of Common Purpose. A TEDx speaker and thought leader, he has been featured in *Computer World* magazine and the *Book of Aspirations*, which highlights 10 influential social innovators in India. He has received multiple prestigious awards, including the Global Change Maker Award, Innovative CEO Award, and Education Icon of the Year. Under his leadership, AKES has won numerous national awards, including India's Top School Chain of the Year, Top Early Childhood Education Chain, and has been consistently recognised among India's Most Respected Education Brands and India's Most Respected Early Childhood Education Brands.



Dr. Ipsita Sapra is an Associate Professor with the School of Public Policy and Governance at the TISS. She was a development practitioner associated with national and international nonprofits for about a decade working on gender issues before moving to TISS as a research scholar in 2010 and then as faculty. She was the Chairperson for the School of Public Policy and Governance for several years, and has curated and delivered several academic programmes. Gender in policy and practice has been an important area of work in her engagement. Dr. Sapra is also a member of the IC in other government organisations. She has worked on safe City initiatives undertaken by the government of

Telangana. Outside of TISS, Dr. Sapra is a visiting faculty at NID, Ahmedabad, and serves on the Ethics Committee of the LV Prasad Eye Hospital, Hyderabad.



Ms. Japleen Pasricha is the founder and CEO of Feminism In India (FII), a pioneering platform advancing gender inclusion online. She is a feminist researcher, social entrepreneur, and digital rights advocate. Through FII, she has led impactful campaigns and research on online gender-based violence, tech-facilitated abuse, and the digital gender gap in India. Japleen’s work focuses on making the internet a safer, more inclusive space for women and marginalised communities. She has contributed to global forums including RightsCon, UN CSW, IGF, and Stockholm Internet Forum, and is recognised for her leadership in feminist digital activism and intersectional media innovation.



Mx. Koyel Ghosh is a gender non-conforming, non-binary queer feminist activist, educator, and Managing Trustee at Sappho for Equality, one of South Asia’s leading LGBTQ+ rights organisations. Koyel has designed and delivered gender-sensitivity training and workshops across India. They have completed their Masters in English from Lady Brabourne College, Kolkata, and has a PG diploma in Mass Communication from Jadavpur University. Their work sits at the intersection of education, activism, and cultural representation.



Ms. N. Bhavani Sri (IAS) is the Secretary (Additional Charge) of the newly inaugurated National Turmeric Board (NTB) as well as the Deputy Development Commissioner—SEZs & EOUs, Telangana and currently holds two positions in Ministry of Commerce and Industry, Government of India. She began her professional career in the IT industry with Tata Consultancy Services before entering the public service. She has earlier worked with the Government of Nagaland as well as the Ministry of Housing & Urban Affairs.



Ms. Nandini Chami is the Deputy Director and Fellow of Research & Policy Engagement at IT for Change. Her work focuses on research and policy advocacy in the domains of digital rights and development, as well as the political economy of women’s rights in the information society. She is part of advocacy efforts surrounding the 2030 development agenda, focusing on issues related to “data for development,” digital technologies, and gender justice. She also provides strategic support to IT for Change’s field centre, which includes training programmes for women’s rights groups on adopting digital tools in their field practice, as well as critical ‘education for empowerment’ for rural adolescent girls.



Prof. Manisha Tripathy Pandey is a sociologist and Honorary Director of Centre for North East Studies and Policy Research (CNESPR) at Jamia Millia Islamia, Delhi. A Professor and former Head at the Department of Sociology, JMI, she has over twenty-five years of experience in research and teaching at undergraduate and post graduate levels. Having obtained a doctorate degree in Sociology from Jawaharlal Nehru University, New Delhi, her research and scholarship have examined the issues of development, globalisation, violence, ethnicity, middle class, diaspora, capitalism, markets, digitalisation, urban spaces, and economic policy. During her two decades long academic career, she has delivered more than 75 invited lectures as resource person in national and international forums, which include Canada, U.S., Australia, and South Korea.



Ms. Meera Shenoy is Founder-CEO, Youth4Jobs, the largest organisation in South Asia skilling youth with disabilities and linking them to resilient livelihoods. She set up SwarajAbility, an AI driven, accessible livelihood platform for youth with disabilities which makes Youth4Jobs a System Changer supporting companies, governments and civil society to ensure PwDs get gainfully employed. Y4J is the South Asia partner of the prestigious Zero project conference, which has experts in 180 countries. Y4J partners with Zero project for WEDO, a global pioneering initiative for economic empowerment of women with disabilities. She has in the past worked in senior government positions, World Bank, and UN. This work has won the highest national and international awards, and featured in our Hon'ble PM *Mann ki baat*, which is a Harvard case study. She writes books and runs NotJustArt which conducts the inspirational Global Ability Photography Challenge, with UN/UNESCO as partners.



Ms. Mousumi Kabiraj is a Programme Associate at the Council on Energy, Environment and Water (CEEW). With over six years of experience, she works at the intersection of clean energy, gender equity, and ecosystem conservation—crafting inclusive, evidence-based solutions for climate-resilient development. At the Powering Livelihoods programme, she supports the scale-up of clean energy-powered livelihood technologies across rural India, focusing on building partnerships, and driving policy convergence to ensure equitable impact. Before joining CEEW, Ms. Kabiraj worked with a grassroots NGO, where she designed gender-focused livelihood programmes. In recognition of her efforts towards transformative social change, she was selected as a fellow under the Young Women Leaders Fellowship, an initiative by CREA and The Red Door.



Mr. Osama Manzar is the Founder & Director of Digital Empowerment Foundation (DEF). Mr. Manzar, a Senior Ashoka Fellow and British Chevening Scholar, has been at the forefront of bridging the gap between access to rights and rights to access. In 2002, he founded the Digital Empowerment Foundation (DEF), which has digitally empowered over 35 million people through 2,000 digital centres across India. His advocacy has shaped major digital policies, including India's Digital Literacy Mission, Common Service Centres, and the ban on FreeBasics. He has also championed grassroots efforts to combat misinformation, creating a network of 500+ rural women fact-checkers, strengthening digital literacy and civic awareness at the village level.



Dr. Priya Hasan is an Assistant Professor in Physics at the Maulana Azad National Urdu University, Hyderabad. She is the co-chair of the Women in Astronomy Working Group of the International Astronomical Union. She also collaborates with groups in India, Europe, the U.S., and Egypt for public outreach and science popularisation programmes for children and adults, and has worked on projects with the IAU-OAD and the US Consulate. She is a Regional Astronomy Education Coordinator of the IAU Office of Astronomy for Education and was previously the Secretary of the Public Outreach and Education Committee, Astronomical Society of India. Dr. Hasan holds a PhD in Astronomy from Osmania University and has conducted postdoctoral research in France and at IUCAA.



Dr. Purnima Chauhan, IAS (retd) Secretary, Himachal Cadre, Govt. of India. With nearly 36 years of civil service experience and a wide spectrum of multiple sector specific imperatives, she handled vertically and horizontally 25 departments enabling solutions from within the most difficult and local problems while motivating, training, and taking one's team along. In these 36 years, she also had an important position as Secretary Administrative Reforms with the tourism and culture departments. While holding the Finance Budget portfolio in 2005-6, she designed and implemented the Gender Responsive Budgeting (GRB) Policy for HP on which she became the key resource person. In 2013, she opened a Gender Resources Centre in HIPA (Himachal Institute of Public Administration) where all GRB cells of departments were trained to mainstream gender issues in all sectors. She is a certified Trainer of Trainers on Gender issues By UN Women in training undertaken at LBSNAA, Mussoorie.



Ms. Rubina Nafees Fatima is a social entrepreneur, TEDx speaker, and Founder-Director of SAFA, an NGO dedicated to empowering marginalised communities through education, skilling, and livelihoods. Since 2008, her initiatives have impacted over 80,000 women and youth. Under her leadership, SAFA launched two women-led enterprises, Artizania and Luqma, and operates four skill training centres across Hyderabad. She is the recipient of several prestigious awards, including the FICCI FLO Woman Achiever Award, Pride of Telangana, and Australia Award. Rubina firmly believes that empowered, inclusive communities and women’s participation are key drivers of social and economic transformation.



Prof. Shahida Murtaza is the Dean of School of Arts & Social Sciences, and Professor of Women’s Studies & Director at Centre for Women’s Studies, Maulana Azad National Urdu University, Hyderabad. She is an academician with over 24 years of experience in Women’s Studies. With an MSc in Anthropology and a PhD in Reproductive Health from Karnataka University, she specialises in gender issues, reproductive health, and socioeconomic development. She has conducted extensive fieldwork in Karnataka and Hyderabad and has been instrumental in advocating for gender parity and women’s empowerment. As Chairperson of the POSH Committee and CPIO for RTI, she ensures a safe and inclusive academic environment. Prof. Murtaza has been honoured for her contributions, including the Eminent Educator Award (2024–25) and a Doctor of Divinity from the Henry Martin Institute. Her expertise is recognised internationally, with invitations to academic forums across Canada, Spain, the U.S., and Germany.



Dr. Vishnu S. Pillai is an assistant professor at the Kautilya School of Public Policy (KSPP). Dr. Pillai completed his PhD in Public Policy from The Hong Kong University of Science and Technology, Hong Kong in June 2022, with his thesis in the area of regulating AI technologies. Before pursuing his PhD in Public Policy, he was with Larsen and Toubro (L&T) Limited for five years. Through their Build India Scholarship Program, L&T sponsored his MTech in Construction Technology and Management from the National Institute of Technology Karnataka (NITK). Before joining KSPP, he worked as a Principal Research Associate at the Indian Institute of Corporate Affairs (a think-tank for the Ministry of Corporate Affairs), where he researched the *Companies Act* and innovative CSR and developed courses on Public Policy for corporate professionals and government officers. At KSPP, Dr. Pillai teaches courses on Statistics, Research Methods, and Regulatory Frameworks for AI technologies. His research area lies in the intersection of technology and governance, especially in the regulation of AI. His works in this area have been published in *Science and Public Policy* and *Journal of Asian Public Policy*.



Ms. Soma Wadhwa, a development and communication academic and journalist, is currently a Senior Research Fellow at the Centre for Development Policy and Practice (CDPP), and Research Scholar at UPES's School of Liberal Studies and Media, Dehradun. She was Fellow and Qualitative Research Lead at the India Development Foundation (IDF), collaborating with India's central and state governments, UN bodies, and international agencies. An award-winning journalist (Sanskriti Award, Press Council of India Award), she held senior editorial positions at *Hindustan Times*, *The Indian Express*, *Outlook*, and *Times of India*. A British High Commission Chevening Scholar, she studied journalism at the University of Westminster and worked at *The Guardian*, London, and conducted Dutch-government-funded research at Wageningen University & Research, Netherlands. She is an alumnus of St. Stephen's College, Delhi University, and recipient of the Shri Ram Scholarship for Excellence in Academics.



Dr. Sridevi Gummadi is a distinguished Professor of Economics at the University of Hyderabad. Her extensive research explores critical areas including food and nutritional security, the economics of discrimination, climate change and agriculture, health, gender, and poverty, as well as the economics of commons and livelihoods. Prof. Gummadi's work focuses on policy implications and socioeconomic issues, contributing significantly to discussions on marginalised communities and sustainable development. She has published articles in numerous journals and edited volumes.



Ambassador Syed Akbaruddin is the founding Dean of the Kautilya School of Public Policy and a distinguished former diplomat with over three decades of service in the Indian Foreign Service. He served as India's Permanent Representative to the United Nations until his retirement in 2020 and was the Ministry of External Affairs' Official Spokesperson from 2012 to 2015. He also held key roles at the International Atomic Energy Agency (IAEA) in Vienna from 2006 to 2011. His earlier diplomatic assignments included postings in Pakistan, Saudi Arabia, and the UN Mission in New York. Since retiring, he has been an active commentator on global public policy. He holds a Master's in International Relations from the Australian National University.



Prof. Syeda Sameen Fatima is the Registrar & Professor in CSE, Anurag University. She received her BTech from JNTU, MPhil from the University of Hyderabad, MS from the University of Massachusetts, USA, and PhD from Osmania University. Dr. Sameen has over 33 years of experience in teaching, research, and administration in India, the USA, and the UAE. She worked at Osmania University, University of Massachusetts, USA, and BITS Pilani, Dubai, in various capacities, and was the first female Principal of the College of Engineering, Osmania University. She has published more than 40 research papers in international journals and conferences and guided 6

students in obtaining doctoral degrees in the areas of Information Retrieval Systems, Artificial Intelligence, Machine Learning, Text Mining, and NLP.



Ms. Uha Sajja is the Associate Director, Social Impact and Women Entrepreneurship at WE HUB Foundation. She has diverse experience in the field of information technology with emphasis on Software Quality Assurance and Project Management. She served as a QA lead and Project Manager roles for major clients and have demonstrated ability to lead large QA teams with expertise in end-to-end STLC from Test planning to Result analysis using the Agile and water fall test methodologies. She is a business graduate with experience in IT Service

Delivery Management, and has served key client engagements, and strategic priorities. She is passionate about moving the needle on promoting and fostering women entrepreneurship that may help them start-up, scale up, and accelerate with global market access. She also writes stories about women who beat the odds and inspire many more.



Dr. Vasudha Katju holds a PhD in Sociology from Jawaharlal Nehru University, and an MA in Sociology from the University of Hyderabad. She has previously taught at Ambedkar University, Delhi, and Krea University. At the Kautilya School of Public Policy, she teaches courses in gender studies and academic writing. She has conducted academic writing workshops in the University of Hyderabad, Azim Premji University (Bhopal), IIT Kharagpur, the Council for Strategic and Defence Research, Jawaharlal Nehru University, and Krea University. Her writing

has appeared in the *Asian Journal of Gender Studies*, *Social Movement Studies*, the *Indian Journal of Gender Studies*, among others.

Speakers

Essays

Not Just Connected, But Empowered: Rethinking the Gendered Digital Divide

Dr. A. L. Sharada

Gender Roles, Digital Access, and the Inherited Architecture of Exclusion

In most patriarchal cultures, women's identities are shaped less by choice and more by inherited roles—caregivers, dependents, silent enablers of male aspirations. This is best demonstrated in the secondary role often played by women sarpanches, with their husbands continuing to wield power as Sarpanch Patis (Chattopadhyay & Duflo, 2004). Access to resources—whether education, land, income, or mobility—has always mirrored this systemic inequality (Connell, 2002; Kabeer, 1999). Today, as the world pivots to digital systems of learning, work, and governance, these structural exclusions are being recreated in new forms.

It is tempting to frame the digital divide as a matter of coverage and connectivity. But the deeper divide lies elsewhere: between those who are allowed to imagine themselves as public, visible, and vocal—and those who are not. Between those whose clicks are extensions of agency, and those for whom the screen remains a window they cannot open.

The Gendered Digital Divide: Not Just a Gap, But a Mirror

The GSMA 2024 report tells us that women in low- and middle-income countries are 19% less likely than men to use mobile internet. In one household we visited in a village, the only smartphone was kept in the father's shirt pocket, even though his daughter needed it for her online classes.

From my experience working with grassroots campaigns, I've observed how families often view digital literacy for boys as a stepping stone to opportunity, but for girls, as a potential threat that must be contained. During the COVID-19 pandemic, this disparity became starkly visible in our field areas—many girls were unable to attend online classes simply because the available mobile phones were controlled by male members of the household. At the same time, our team was using digital tools to monitor the health of pregnant and lactating mothers, highlighting how the same technology can either exclude or empower depending on whose hands it is in. Girls may be trained, but not trusted. Women may be included in programmes, but rarely in decisions. These silences speak louder than any statistic.

Beyond Access: From Training to Transformation

To bridge this divide, it is not enough to distribute devices or teach navigation. We need to empower women to explore, experiment, and engage with digital media creatively—to move beyond being mere consumers and become active creators and influencers.

Government initiatives like Digital India, DISHA, SWAYAM, and Internet Saathi have laid the foundation by providing training and infrastructure. But if these tools are to be truly empowering, we must ask: do they invite women to speak, create, dissent, and lead—or do they merely instruct them in how to conform digitally?

Social Empowerment Tools: Platforms of Possibility

Social empowerment tools are more than apps or services; they are bridges between potential and participation. Platforms like Mahila e-Haat and Meesho have enabled thousands of women to become entrepreneurs from within their homes. Learning portals like PM e-Vidya and SWAYAM democratise education. Helplines and grievance portals offer recourse against violence, while mobile wallets allow financial autonomy.

One initiative that I find particularly compelling is Arré Voice, a platform where rural and marginalised women tell their stories in their own voices on an audio channel that protects their privacy while opening many doors for them. It doesn't just teach digital skills; it rewrites the script—women as narrators, not just users. In these voices, hesitant at first but growing in confidence, one can hear the first notes of a digital revolution.

The Harder Terrain: Mindsets, Not Modems

If hardware and data are the visible tools of digitisation, mindsets are the invisible battlegrounds. Many families still believe women do not “need” technology. That it is unsafe, inappropriate, or even immoral. That girls who spend time online are distracted from their duties. These attitudes are rarely questioned, even by well-meaning interventions.

What we need is not just training, but unlearning—among families, educators, policymakers. We need to showcase not just women in need of digital literacy, but women already navigating, innovating, influencing—on their terms.

We must also recognise that not all participation is empowering. If women are encouraged to speak only in pre-approved ways, to market only certain kinds of products, or to conform to “safe” expressions, then empowerment becomes a curated illusion. Are we expanding freedom, or simply dressing up compliance in digital clothes?

The Backlash: Misuse, Surveillance, and Reinforced Fears

As women assert their digital presence—through education, enterprise, or expression—the backlash is swift and insidious. During the pandemic, we saw many cases of online sexual harassment emerge in our field areas, echoing global findings: 20% reported unsolicited sexual advances, 17% received obscene images or videos, and 7% had humiliating or embarrassing images shared without consent (I-SHARE Consortium, 2024).

In many communities, these risks are weaponised by patriarchal gatekeepers to reinforce control. The narrative becomes: “It's not safe out there—so stay inside.” What is framed as protection often serves as policing. The answer is not restriction, but resilience: we must invest in digital safety literacy, robust redressal mechanisms, and community dialogue that separates risk from blame. A feminist digital future must not only connect—it must protect.

Entrepreneurship and Digital Identity

What has truly transformed many women's lives is not just the ability to earn, but the shift in how they are seen—by their families, by their communities, and most importantly, by themselves.

A woman running a pickle business from her village via WhatsApp is not just earning. She is commanding respect. She is negotiating terms. She is challenging the idea that her work is informal, invisible, or secondary. Government schemes like Mahila e-Haat, DAY-NRLM, and Amazon Saheli have helped facilitate this transition. But what sustains it is not subsidy—it is self-belief.

In our country, the quiet assertion of economic identity is a silent disruption—with immense potential for transformative change. Digital entrepreneurship is not a stopgap. It is the first real path to dignified, decentralised economic participation for millions of women.

Reframing the Ask: What Kind of Digital Future Are We Building?

The time has come to move beyond the language of inclusion as a benevolent act. Inclusion is not a gift to be given. It is a right to be recognised. We must stop asking how we can "help" women access digital tools, and start asking how we can stop denying them the right to shape, question, and redefine the digital public.

What if SHGs were equipped not just to manage accounts, but to use digital tools for civic engagement? The impact of women engaging with digital platforms to address civic administration, service delivery, grievance redressal, social mapping, and even public and personal emergencies would be far-reaching—reflecting what true empowerment looks like.

That is the digital future we must work toward—not just connecting, but empowering. Because when women are empowered, they in turn empower families, institutions, and communities.

References

- Chattopadhyay, R., & Duflo, E. (2004). Women as policy makers: Evidence from a randomised policy experiment in India. *Econometrica*, 72(5), 1409–443.
- Connell, R. W. (2002). *Gender*. Polity Press.
- GSMA. (2024). *The Mobile Gender Gap Report 2024*. GSMA.
- I-SHARE Consortium. (2024). *Online harassment during COVID-19: A cross-sectional analysis across 10 countries*. ResearchGate.
- Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change*, 30(3), 435–64.

Technology and Economic Empowerment: Exploring Gendered Impacts of Emerging Innovations

*Mousumi Kabiraj
Divya Gaur*

Technological advancements are an inherent part of humanity's evolution—from the invention of the wheel to the latest mobile phones, humans have consistently developed new technologies to improve their lives. However, if gender inequalities are not considered in the design and implementation of these technologies, they can unintentionally worsen existing disparities (Naskar and Kabiraj 2025). We have witnessed this before—for instance, women were excluded from medical research, resulting in inadequate understanding of women's health (Balch 2024). To prevent such gaps in the future, it is essential to consider women's perspectives at every stage of technological development—from invention to distribution.

One such emerging technology is Decentralised Renewable Energy (DRE)-powered livelihood solutions—such as solar dryers, solar micro-pumps, solar cold storages, and others—which can significantly impact the lives and livelihoods of rural communities, particularly women. These renewable energy-based solutions are portable and can address challenges related to unreliable electricity, enhance productivity and income, and reduce drudgery (Singhal et al. 2023). Not only do these technologies offer an opportunity to bridge gender gaps, but they also hold the potential to empower women in rural areas. This essay explores how gender inequalities can be addressed through the adoption of DRE technologies in India's growing economy. The insights shared here draw on learnings from the Powering Livelihoods programme, a joint initiative of the Council on Energy, Environment and Water (CEEW) and Villgro Innovations Foundation. The programme aims to scale DRE livelihood technologies for last-mile users, especially women, to enhance the rural economy.

Social and Cultural Perspective

We begin by examining gender inequalities through a social and cultural lens. In many rural parts of India, cultural norms often expect women to stay at home, manage domestic chores, and care for children. This leads to time poverty — a situation where working women are still expected to fulfil domestic responsibilities, leaving them with little to no “discretionary time” (Hyde, Greene, and Darmstadt 2020). While changing deep-rooted cultural norms is challenging, DRE technologies can increase women's discretionary time by improving efficiency and reducing physical effort. For instance, solar silk-reeling machines eliminate the labour-intensive thigh reeling process by introducing mechanisation (Kabiraj and Singhal 2023). Rural Indian women spend an estimated 5–8 hours daily on cooking, with 20 per cent of that time spent collecting firewood.

Another important aspect is the role of startups and manufacturers producing DRE technologies. Many such enterprises have limited female representation among their employees (Singhal et al. 2023). A lack of women in these teams makes it harder to understand and cater to the needs of female customers. For example, women are more likely to engage with female sales agents, which can positively influence adoption of DRE technologies. In summary, from a social

and cultural standpoint, increasing the participation of women in both the production and adoption of DRE technologies can make it easier for them to enter and thrive in the workforce.

Economic Perspective

From an economic perspective, DRE technologies offer a strong potential to reduce gender inequality—but only if access barriers are addressed. Financial support is essential for women to adopt these technologies. However, women often face challenges such as limited literacy, mobility, and access to credit (Singhal et al. 2023). Furthermore, many ecosystem actors do not allocate sufficient resources to meet women's specific needs, leading to their marginalisation in value chains.

To ensure equity, financing institutions must consider these constraints and offer targeted solutions. Encouragingly, when women do gain access to DRE solutions, there is a measurable rise in productivity and entrepreneurship. For instance, solar-powered silk-reeling machines reduce labour intensity and boost output in the textile sector (Kabiraj and Singhal 2023). A CEEW study found that 90 per cent of women users of DRE technologies reported an increase in income (Naskar and Kabiraj 2025). Thus, providing adequate financial and institutional support for women can significantly enhance their economic participation and success.

Political and Policy Perspective

It is equally important to integrate a gender lens in policy and political discourse on DRE technologies. Policymakers must ensure that women's needs and voices are reflected in policy frameworks related to DRE. Without this, technology interventions risk reinforcing existing gender divides.

Awareness building is another key aspect. Startups should invest in campaigns and tools that actively highlight gender inequality and promote the benefits of women-centric DRE adoption (Singhal et al. 2023). Greater visibility of successful women users can serve as a powerful example within rural communities, inspiring others to pursue livelihoods and microenterprises. DRE technologies, thus, not only support direct empowerment but also enable a ripple effect by encouraging broader social change.

Conclusion

DRE livelihood technologies hold immense potential to reduce gender inequality. They can empower women, improve productivity, reduce time poverty, and increase income. However, realising this potential requires active efforts from all stakeholders — manufacturers, financiers, policymakers, and communities — to integrate gender considerations across the value chain. Without this, well-meaning interventions could inadvertently widen the gender gap.

Recommendations include:

- Establishing gender-focused teams in DRE enterprises
- Ensuring a minimum ratio of women employees, including in leadership roles
- Creating targeted outreach for women customers
- Supporting access to finance for women-led enterprises

In conclusion, DRE technologies, if deployed thoughtfully, can be transformative in advancing gender equity alongside economic development.

Unequal Accessibility in the Digital World Replicates and Further Deepens Discriminatory Patterns in India

Feminism In India (FII)

In the endeavour to make India a digital space, we often forget to look back at those who are left behind on the other side of the digital divide. As the Covid-19 pandemic hit the nation, most official and non-official proceedings and transactions shifted to the digital platform. The physical world became emulated into the digital space, but it left behind a large population who do not have access to quality internet or have the means or ability to use it regularly.

Oxfam in their annual India Inequality Report brings focus to the disproportionate prospect of progress and advancement that Digital India accentuates. It opens new avenues of opportunities and accessibility that a large section of society, especially those who are financially challenged, keep struggling to catch up with.

The report mentions: “Technology and digitalisation have benefited the privileged but have also been the cause of inequalities creating a digital divide. This divide largely stems from unequal access to and use of Information and Communication Technologies (ICTs).”

It repeats the discriminatory pattern of privileging the already privileged ones and narrowing down the already privileged few who get to progress in the increasingly digitised world. It leads to structural and institutional inequality that cruelly and unjustly circles out the privileged few as the benefactors of their services.

“The growing inequality based on caste, religion, gender, class, and geographic location also gets replicated in the digital space.” Explained Amitabh Behar, CEO of Oxfam India to Businessline. “People without devices and the internet get further marginalised due to difficulties in accessing education, health, and public services.”

The government needs to ensure universal access to the internet and smart devices before privileging the digital mode of official procedures and transactions. A digital barrier already existed in the country since the inception of smartphones and the internet as it limited data availability and communicability to a privileged few. Since the pandemic, the gap has widened in every sphere of life and has ruthlessly left behind a large section of people struggling to make ends meet.

In this technological divide, the intersectionality of caste, religion, gender, and ethnicity plays a role in determining who gets access to the narrow premise of the digital world. Whether a person possesses a smartphone, has a stable internet connection and electricity, and is digitally literate is determined by their caste, religion, or ethnic location in society. Such discrimination and unequal distribution of knowledge, information, and means of acquiring it are often replicated within the digital space as well.

Oxfam also makes a detailed study on how the caste background of a person impacts their chances of owning a laptop or a computer or having a stable internet connection. As of 2021, a person from General Category is more likely to possess a computer or a laptop than a person

belonging to the Scheduled Tribes (ST) category. The gap seems to have widened from 7% since 2018 owing to the adverse effect of the pandemic.

Oxfam has also found that a General or an Other Backward Classes (OBC) category person is 4-6% more likely to own a television than a Scheduled Tribe person. However, from 2018 to 2021, the gap between a general person owning a phone and an ST category person owning a phone has dropped from 10% to 3%.

In a drastic leap, many essential state services, such as education, health, and banking procedures shifted to the digital platform exclusively. It is not just exclusionary but also highly discriminatory for the state to make such a shift without universalising data connectivity and accessibility. On this matter, Behar commented that the government should “treat digital technologies as a public utility, not a privilege.”

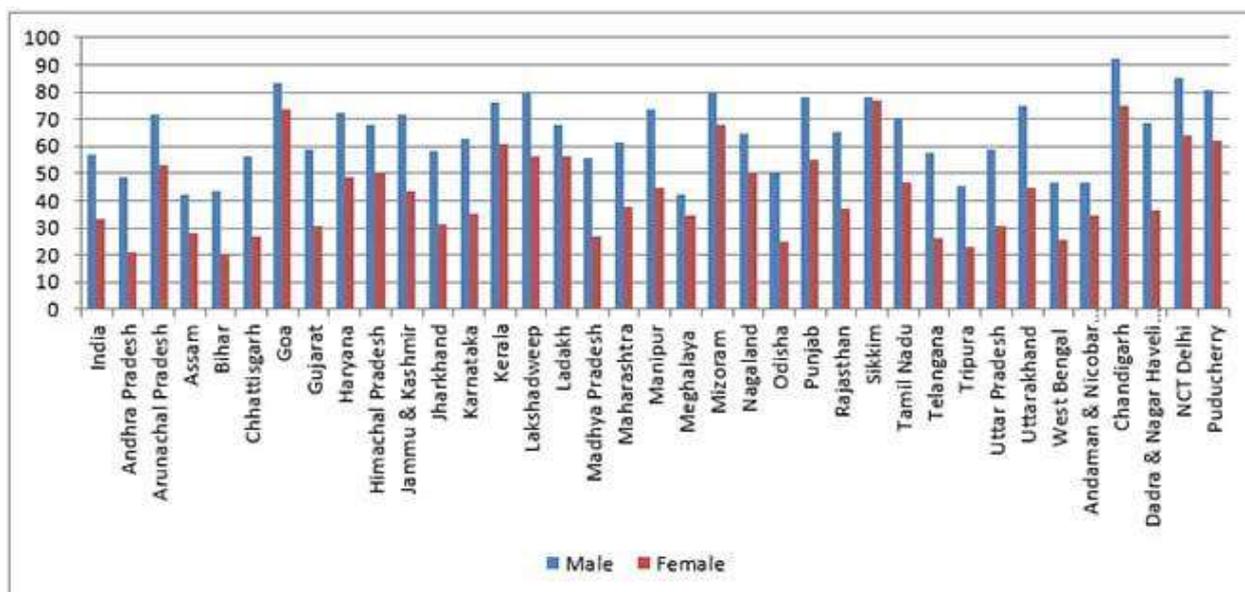
The report highlights the dramatic digital leap that the nation underwent due to the pandemic. As a result, in professional fields or educational sectors, it becomes quite inconvenient if one does not have a laptop or a computer to carry out the necessary assignments. According to a survey conducted by Centre for Monitoring Indian Economy (CMIE) between September and December 2021, 96.6% of the subjects responded that they do not possess a computer or a laptop.

When it comes to internet accessibility and connectivity, gender also plays an important role. The report states that only one-third of internet users in the country are women. It shows that women are 30% less likely to own a mobile phone than men. Studies conducted in this regard also show that digital literacy is considerably less in women than in men. Even with access to the internet, they are unlikely to be able to use it for communication purposes.

With the sudden shift to digital platforms in major educational and professional sectors, women are much more likely to drop out due to inaccessibility. This, in turn, poses a greater risk to women’s education rate and their chances of securing a job. Such a gendered division of internet accessibility can directly contribute to the feminisation of poverty.

The socioeconomic background of a person also largely affects a person’s chances of data accessibility. Reports show “*each gigabyte (GB) of data costs low-income households (earning less than USD 2 per day) 3% of their monthly income versus 0.2% for middle-income households (earning USD 10–USD 20 per day).*” Cheap internet is given to those who buy data in large quantities. Those with higher income salaried jobs and higher educational levels would inevitably be the ones who would benefit from such schemes.

Therefore, it becomes evident that data connectivity privileges the financially privileged class within the capitalist structure of data business.



Source: ORF (Individuals who have ever used the internet- State-wise gender divide).

In terms of data affordability, India ranks 47th out of 110 countries. For an Indian citizen, it is relatively easier to access the internet but access to devices is disproportionate among Indians, based on their gender, socioeconomic background, and caste identity. Women within the ST community are 21% less likely to be digitally literate than men.

The Oxfam report further reiterates, *“In a country plagued by high socioeconomic inequality, the process of digitalisation in itself cannot be posited as the panacea for the inherent challenges of the physical world. It becomes particularly problematic when half of the population neither has access to gadgets and the Internet nor the technological know-how to move to a digital environment.”*

In a hierarchy of privilege, *“male,” “upper caste,”* Hindu, and urban citizens belonging to heteropatriarchal households are the ones who are most likely to have data accessibility. Such hierarchy is uniquely intersected by multiple geo-political and social identities of a person. The only possible way to bridge the gap in data accessibility is if the government sanctions data accessibility in every area, in every household as an essential need.

In order to strive for an *“inclusive,” “resilient,”* and *“sustainable”* digital environment, it is imperative to make equal accessibility the primary concern of every institution. Oxfam suggests that investment in public Wi-Fi, and community internet access points can greatly improve data accessibility. Besides, state-sponsored investments in the digital industry and continued efforts to control data prices can bring down costs and help ensure more people have access to the internet.

Reference:

Dhar, D., & Feminism in India (FII). (2022, December 15). Unequal accessibility in the digital world replicates and further deepens discriminatory patterns in India. *Feminism in India*. <https://feminismindia.com/2022/12/15/unequal-accessibility-in-the-digital-world-replicates-and-further-deepens-discriminatory-patterns-in-india/>

Digitalisation and Gender

Prof. Manisha T. Pandey

Digitalisation—the integration of digital technologies into everyday life, economic systems, and governance—is often portrayed as a neutral or universally beneficial process. However, digitalisation is deeply gendered in both its design and impact. It shapes, and is shaped by, existing social inequalities, including those based on gender, class, caste, geography, and race. Without a critical gender perspective, digital transformation risks reinforcing and deepening structural exclusion.

Emerging technologies (such as AI, automation, digital platforms, Big Data and surveillance systems) are reshaping societies, transforming economies and redefining labour, financial access, and communication. While these digital advancements present vast potential for economic empowerment, they are not gender-neutral. Women and gender minorities often face systemic barriers in accessing, benefiting from, and shaping digital technologies. This paper investigates the gendered dynamics of digitalisation, focusing on how algorithmic design, platform economies, and digital financial systems influence economic participation. Drawing on intersectional analysis, my paper highlights both the risks of digital exclusion and the emancipatory potential of feminist digital interventions. A gender-just digital future, the paper argues, requires inclusive design, equitable access, and transformative policy frameworks.

Women, transgender, and non-binary individuals often experience both the promises and harms of technology differently due to structural inequalities, bias in design, and lack of representation in the tech industry. This paper explores how gender intersects with the development, implementation, and impact of new technologies and reflect on the broader implications for digital democracy, inclusion, and equity.

My ongoing major research project titled "State, Market and Digitalisation: A Study of Digital Democracy and Exclusion in India," sponsored by the Indian Council of Social Science Research (ICSSR) examines the intersectional nature of digital economic participation in contemporary India. The study investigates the possibilities of digital inclusivity and digital empowerment in a knowledge economy like India, using Harold Lasswell's model of "who gets what, when, how" to understand the "politics" of the digital. This framework is particularly relevant given the contradictory effects of digitalisation, which simultaneously enables economic empowerment and perpetuates marginalisation across diverse social and economic groups.

The research primarily focuses on the capital city districts of Delhi NCR, Jammu and Kashmir, Assam, Kerala, and Gujarat. A mixed-methods approach has been employed through in-depth interviews, focus group discussions and a pan-India online survey for a comprehensive view. Focus group findings from Assam reveal that while digital payment systems and e-commerce platforms have democratised economic participation; key infrastructural barriers, security concerns, and digital illiteracy contribute to continued marginalisation.

Preliminary findings suggest emerging patterns of digital stratification where technological capital may determine economic outcomes. Early evidence indicates differential experiences between the digitally literate (DigiThrivers) and the digitally excluded (DigiStrugglers) in terms of economic opportunity, accessibility and vulnerabilities; potentially

leading to the creation of newer forms of social stratification. To examine the dynamics of digital democracy and exclusion in India, the study employs a mixed-methods research design by integrating surveys, in-depth interviews, and focus group discussions given the complex, stratified, and intersectional realities of digital transformation in India.

Findings from the interviews in Srinagar reveal near-universal daily internet use for men (85.4%), women (81.3%), and all transgender and “prefer not to say” respondents (100%), with high smartphone dependence (over 82% for men and women, 100% for transgender). Yet the women belonging to the rural areas and those from SC/ST/OBC backgrounds have lower daily internet and digital payment usage than urban or general category women. Transgender respondents show universal access but also face the highest digital discrimination rates (66.7%) and lower fintech usage.

Women report greater privacy vigilance but less confidence in data security and under-participation in advanced fintech. In contrast, qualitative findings from the focus group discussion in Assam reveal ‘why’ people remain excluded by highlighting the infrastructure gaps, accessibility concerns, emotional costs, and erosion of traditional social ties. The analysis shows that digital infrastructures can democratise economic opportunities but can also reinforce existing (or create new) inequalities, depending on identity and context. Addressing India’s evolving digital divide requires understanding both the “who” revealed by data and the “why” voiced in lived experiences. Based on this ongoing study and other researches, the following issues have emerged:

Access and the Digital Divide

While the digital revolution has expanded access to information and services, this access is far from equal. Globally, women are significantly less likely to have access to mobile phones, the internet, or digital skills training—especially in the Global South.

Digital gender gaps persist globally. According to GSMA (2022), women in low- and middle-income countries are 19% less likely to use mobile internet and 7% less likely to own a smartphone. In India, patriarchal control over mobile phone use has been linked to safety concerns, social stigma, and economic dependence (Jain, 2021). These gaps limit women’s access to e-commerce, financial apps, online education, and remote work opportunities, thereby reinforcing broader economic inequalities (UNESCO, 2019).

In India, rural women and Dalit communities face compounded challenges in accessing digital tools. The Digital India initiative has increased infrastructure reach, but usage remains skewed by gender and geography. For example, in Rajasthan, many girls drop out of school due to limited digital infrastructure and patriarchal control over mobile phone use (Jha & Tripathi, 2021). In Jharkhand, tribal women often lack identity documents and mobile phones, excluding them from government e-services and mobile banking (Drèze, 2019). In Kerala, despite high literacy, studies show that Muslim women in some districts experience social restrictions on mobile use due to conservative norms, limiting digital access (Subrahmanian et al., 2020). Intersectionality is critical here: Dalit women in Uttar Pradesh, for instance, face both gender-based restrictions and caste-based exclusion from digital skill development centres and public Wi-Fi points (Singh, 2022).

Algorithmic and Design Bias

Technologies often encode the biases of their creators. Buolamwini and Gebru (2018) demonstrated that commercial facial recognition systems misidentify darker-skinned women at rates up to 34.7%, compared to 0.8% for lighter-skinned men. Similarly, hiring algorithms and credit scoring systems have been shown to perpetuate gender and racial discrimination (O'Neil, 2016). Voice assistants like Siri and Alexa also reflect and reinforce gender norms by adopting feminised personas that are submissive and apologetic (West, Kraut, & Ei Chew, 2019).

Gendered Labour in Digital and Platform Economies

Platform labour offers flexibility but often comes at the cost of stability and rights. Women disproportionately occupy roles in informal digital labour—such as microwork, content moderation, and domestic services via apps—where they face algorithmic control and lack social protections (Gray & Suri, 2019; Mezzadri, 2020). Platform design also assumes mobility and time flexibility, ignoring gendered care responsibilities and safety concerns (Scholz, 2017).

In India's informal digital economy, many women take up precarious online work. In Hyderabad, women are employed in data annotation jobs by AI outsourcing firms, often working from home for low pay with no legal safeguards (Raval & Dattani, 2021). In Bangalore, migrant women domestic workers have been brought onto service apps like UrbanClap (now Urban Company), but their labour remains underpaid and invisible, with few protections or control over terms of work (Mehrotra, 2020). In Tamil Nadu, textile mill workers—mostly young Dalit women—are increasingly managed through digital HR systems that monitor productivity but offer no recourse for grievance redressal (ILO India, 2019). These examples reveal how digitisation of work can reinforce gendered and caste-based hierarchies instead of dismantling them.

Digital Financial Systems and Surveillance Risks

Digital financial inclusion initiatives like Aadhaar in India aim to improve service delivery but have created unintended barriers for women. Many lack documentation to access services. Biometric failures disproportionately affect elderly or manual labourer women (Drèze, 2019).

The Aadhaar-based Direct Benefit Transfer (DBT) system has faced criticism for its impact on poor women, especially those without control over mobile phones or bank accounts. In Bihar, many women in SHGs (Self-Help Groups) struggled to access Jan Dhan accounts because biometric failures or mismatches led to transaction rejections (Ramanathan, 2020). In Madhya Pradesh, Adivasi women often had to walk several kilometres to access fingerprint-enabled banking kiosks, only to be denied funds due to system errors (Khera, 2021). In Uttar Pradesh, widows and elderly women reported being unable to receive pensions due to Aadhaar mismatches or lack of tech literacy, deepening exclusion (Drèze & Khera, 2017). These cases reveal how biometric surveillance, though framed as efficient, exacerbates exclusion for the most marginalised women.

Gendered Experiences of Online Spaces

Online harassment is a significant barrier to digital participation. Studies show women are more likely to face threats, stalking, and abuse online, especially those who are public-facing or from marginalised backgrounds (Amnesty International, 2018).

The internet can be both a space of empowerment and a site of violence. Women activists, journalists, and public figures face disproportionate online harassment and abuse. LGBTQ+ individuals often use digital platforms to find community—but also risk exposure, blackmail, or surveillance. In Delhi, Dalit and Adivasi women journalists and activists have reported targeted abuse on Twitter and Facebook, including casteist and sexualised threats (Equality Labs, 2020). In Kashmir, female students and journalists face surveillance and online trolling for voicing political views, often under state scrutiny (Rashid, 2021).

Feminist Digital Futures: Possibilities and Resistance

Despite structural barriers, feminist tech movements are creating alternative visions of empowerment. Feminist research labs build ethical, inclusive algorithms (Data & Society, 2021). Community internet networks bridge access gaps in rural areas. Also, online campaigns (e.g., #MeToo, #DalitWomenFight) have shifted public discourse and activism. These actions reflect a vision of digital empowerment rooted in justice, care, and collective action (Crawford & Joler, 2018).

Conclusion

Technological advancement alone does not guarantee empowerment. Without deliberate, intersectional, and feminist engagement, emerging technologies can reproduce and deepen gender inequalities. A more just digital future requires inclusive design, critical policy reforms, and recognition of technology as a political and social construct—not merely a tool for economic growth.

Pathways to Gender Equality in the Platform Economy: A Policy Agenda for Beijing+30 and Beyond

Nandini Chami

(This is a summary of the key findings and recommendations from the research study of the same name published in March 2025. See <https://itforchange.net/node/2670> for full report)

Introduction

Thirty years after the adoption of the Beijing Declaration and Platform for Action, it is evident that the opportunities of the digital transition have not been adequately leveraged for gender equality in the world of work. The early promise of flexi-work and increased labour participation for women in the platform economy has not materialised. Instead, platformisation has deepened intersectional inequalities—of gender, class, geography, and race, making women¹ workers more “precarious, insecure and vulnerable.” A research by the Fairwork Project in 38 countries across five continents in 2023 found that digital labour platforms make tall claims in their public relations campaigns about “inclusive, safe and fulfilling” work, but are gender-blind in their design and operations.

Platform work reproduces gender-based occupational segregation, perpetuating gender pay gaps and cementing the feminisation of work. Further, the misclassification of employment arrangements in platform work has rolled back hard-won labour rights, especially, gender-based entitlements available in standard employment relationships.

What confronts us in the digital economy is a whole-of-system reorganisation of employment relationships, as datafication and algorithmic optimisation structurally transform work relationships. Algorithmic management and control are a feature not only in emerging platform marketplaces in services work but also in traditional workplaces that are digitalising—the factory floor, frontline service delivery in health and education, and so on. This shift calls for multi-scalar policy responses that can get our institutions ready for a feminist future of work.

To explore the building blocks of this imperative, IT for Change, DAWN, and Friedrich-Ebert-Stiftung (FES) convened a series of four consultations in the Asia-Pacific, Africa, Europe, and Latin America in February 2025, bringing together 50+ feminist scholars, practitioners, gender equality experts, lawyers focused on labour rights and trade union representatives.

The joint reflection focused on the following aspects:

- the unique challenges that women workers face in platform work contexts,

¹ We follow the views expressed by the Committee on the Convention against all Forms of Discrimination against Women in CEDAW/C/81/D/134/2018 under article 7 (3) of the Optional Protocol, concerning Communication No. 134/2018. “Women” thus includes all women, including lesbian, bisexual, transgender and intersex women. Further, our work for gender justice addresses all forms of discrimination on the basis of sexual orientation, gender identity, gender expression or sex characteristic.”

- regulatory gaps that exacerbate gender-based discrimination and exclusion in the platform economy, and
- core elements of effective policy design for feminist futures of work.

The consultations were based on Chatham House rules, and anonymity has been retained regarding attribution for specific comments and reflections. This policy report synthesizes the key insights from the consultations and concludes with a set of concrete recommendations for a policy agenda on platformisation and women workers' rights.

Summary Findings: Women Workers' Unique Challenges in the Platform Economy

Though labour exploitation in platform work arrangements affects all workers, there are unique gendered dimensions that impact women workers.

- Feminised platform work tends to be invisible, performed in private spaces, and often overlooked in policy discussions.
- Algorithmic work management systems discriminate against women and non-binary people and also penalise them.
- Social protection and hard-won, gender-based entitlements, such as maternity leave, have been rolled back in platform work arrangements.
- Location-based platforms evade their obligations for workplace safety by using simplistic solutions; for example, panic buttons in ride-hailing cabs and automatic lockouts during time slots considered unsafe for women.
- In the case of online micro-work, prolonged exposure to harmful and violent content in data annotation and content moderation tasks takes a major toll on women workers' physical and mental health.

Regulatory and policy responses across the globe are unable to effectively address the challenge of gender-based exploitation in platform work. Firstly, the policy blind spot in protecting the rights of women workers in home-based service work is a problem that spills over even into the platformisation of such work. In emerging crowd work arrangements, where women workers comprise a significant proportion, the application of the standard employment contract becomes difficult because of isolated work environments. A second challenge is the intensification of gender-based discrimination presented by techno-design architectures. Thirdly, holding transnational platform corporations to account for their labour rights obligations has been an uphill task, especially in the Global South.

Policy Recommendations

Governments need to implement measures in four broad areas:

1. Foundational rights and principles at work for all women platform workers:

Regardless of the employment status accorded to platform workers in the law, foundational rights and principles at work must be upheld in all platform work arrangements, particularly in female-dominated platform work sectors where workers tend to be invisible and home-bound. Governments need to undertake the following measures: (a) Implement gender-responsive policies for feminised platform work; (b) introduce mandatory obligations for labour rights on digital platforms, as the call from Latin American trade unions on “Five Aspects Towards an International Convention on Digital Platforms with a Gender Focus” (2023) addresses.

2. Gender-responsive social protection frameworks for platform work:

Social security and social protection for women workers in the platform economy deserve immediate attention.

Governments must take the following actions: (a) Deploy design that recognizes diverse gendered realities; (b) Ensure access to the full range of social protection for platform and gig workers; and (c) account for unpaid care work; (d) Shift the burden of mobilising fiscal resources from workers to platform companies.

3. A data rights agenda for a gender-equal world of work:

In the platform economy, foundational rights at work are inextricably connected to a robust worker data rights agenda. Data rights frameworks at the national level need to be informed by a well-rounded gender perspective. In specific, governments must take the following actions. (a) Personal data protection laws and labour laws must prohibit data processing in the workplace that enables employers to make inferences about gender identity, menstrual health, and marital and pregnancy status. Such protections should be extended to workers in non-standard employment contracts (platform and traditional gig work), going beyond regular employment. (b) Recognise the gendered impact of indirect discrimination in workplace algorithmic decision-making (such as surge pricing algorithms in ride-hailing that end up penalising more women than men for their inability to work peak hour slots, or recruitment algorithms that reject candidates who have taken breaks in their careers) as a violation of equal treatment; (c) Encourage women worker-owned platform cooperative business models

4. A well-governed digital economy:

A feminist future of work needs dedicated policy action to address macro-economic policy for gender-inequitable development. In the Global South, in particular, governments need to undertake the following measures: (a) Rein in transnational digital corporations in data and AI value chains that are characterised by a maze of subcontracting arrangements and feminised, informal work, (b) Design digital economy roadmaps that advance women’s meaningful economic participation and not just inclusion.

An International Labour Rights Agenda for Women Workers in the Platform Economy

Building on the 2025 International Labour Conference, the following dimensions become critical for shaping an international labour rights agenda for women workers in the platform economy:

- Women workers in micro-work, often invisible in the policy process, and women in platform-based services work, most vulnerable to misclassification, need to have access to the highest standards of labour protection.
- A new international labour standard for automated work management systems on a gendered approach to privacy, personal data protection, and the elimination of algorithmic discrimination is needed. This should be applicable to all work settings, not just digital labour platforms.
- Technical guidance on the gender-responsive design of platform work environments and automated management systems must be developed to set clear guidelines for eliminating intersectional discrimination through gender-blind algorithms.

Policy, Governance, and Global Perspectives for Women in Science and in Physics and Astronomy in Particular

Dr. Priya Hasan

Despite growing awareness and progress in gender equality, women remain significantly underrepresented in science, technology, engineering, and mathematics (STEM), particularly in fields like physics and astronomy. While societal attitudes have begun to shift, deep-rooted systemic, cultural, and institutional barriers continue to challenge women's full participation. Policy frameworks, governance structures, and international collaborations have a critical role to play in not only identifying and dismantling these barriers but also promoting sustainable, inclusive, and equitable environments for women to thrive in scientific careers.

This essay explores the current landscape of women in science, with a particular emphasis on physics and astronomy. It investigates how policies and governance structures at national and international levels affect women's representation and retention in these fields. It also provides a global perspective, examining success stories, ongoing challenges, and recommendations for transformative change.

Historical Context and Gender Gaps in Science

Historically, the contributions of women in science have been marginalised or overlooked. From the hidden figures of NASA to groundbreaking scientists like Marie Curie, women have played critical roles in shaping modern science, often without due recognition. Social norms and limited access to education excluded women from scientific institutions for centuries.

While the number of women earning science degrees has steadily increased globally, the pipeline narrows significantly at the postgraduate and professional levels, particularly in physics and astronomy. According to data from UNESCO and various national science foundations, women represent less than 30% of researchers globally, and in physics and astronomy, the percentages are often much lower.

Policy Frameworks and Governance Mechanisms

Different countries have adopted varied policy strategies to address gender disparities in science. The European Union (EU) initiatives such as Horizon Europe and Gender Equality Plans (GEPs) mandate gender-balanced research teams and gender analysis in research content. In India, the Department of Science and Technology's "Women in Science" programme promotes re-entry fellowships, mentorships, and gender auditing of institutions. The United States has implemented Title IX policies and National Science Foundation (NSF) ADVANCE programmes to support institutional transformation for gender equity.

Academic and research institutions also play a key role. Leadership commitment is essential to setting clear equity and diversity goals. Institutions must adopt transparent recruitment, evaluation, and promotion processes. Internal governance should include gender equity officers, diversity committees, and anti-harassment mechanisms. Regular collection and analysis of gender-disaggregated data can guide policies and ensure accountability.

The Global Landscape and Multilateral Engagement

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has made gender equality a global priority. Its 'STEM and Gender Advancement' (SAGA) project supports countries in developing evidence-based policies. The Sustainable Development Goal 5 (SDG 5) calls for achieving gender equality and empowering all women and girls, with specific attention to access to education and participation in science.

Organisations like the Global Young Academy, L'Oréal-UNESCO For Women in Science, and the Organization for Women in Science for the Developing World (OWSD) create platforms for networking, funding, and mentoring. Multi-national research facilities such as CERN and SKA (Square Kilometre Array) emphasise inclusive practices in recruitment and training.

India in Focus

Women in India have made significant contributions to science, yet their representation in physics and astronomy remains disproportionately low. We shall examine the policies, governance structures, and sociocultural factors affecting women's participation in these fields. We explore India's historical context, current gender disparities, government and institutional initiatives, and challenges hindering progress. By analysing case studies and global best practices, we recommend policy interventions to enhance gender equity in Indian physics and astronomy.

India has a rich legacy of women scientists, from ancient scholars like Gargi and Maitreyi to modern pioneers like Dr. Bibha Chowdhuri (particle physicist) and Dr. Jocelyn Bell Burnell's Indian counterparts. Despite this, women remain underrepresented in physics and astronomy due to systemic barriers, cultural biases, and institutional gaps. According to the Department of Science and Technology (DST), women constitute only 14% of scientists in research institutions and even fewer in physics-related fields.

Historical Context of Indian Women in Physics and Astronomy

- Ancient India: Women like Gargi Vachaknavi participated in philosophical and astronomical debates.
- Colonial Era: Annie Besant and Dr. Kamala Sohonie (first Indian woman with a PhD in science) broke barriers.
- Post-Independence: Dr. Bibha Chowdhuri (worked on cosmic rays with Homi Bhabha) and Dr. Asima Chatterjee (chemistry, but inspired women in STEM).
- Dr. Priyamvada Natarajan (astrophysicist at Yale, known for dark matter research).
- Dr. Rohini Godbole (particle physicist, advocate for women in science).
- Dr. Annapurni Subramaniam (Director, Indian Institute of Astrophysics).

Despite these examples, women remain a minority in leadership roles in physics and astronomy institutions.

Current Status of Women in Physics and Astronomy

School Level: Girls outperform boys in science exams but are discouraged from pursuing physics due to societal stereotypes.

- Higher Education:
 - IITs: Only 8%–10% of physics PhDs are women.
 - TIFR, IISc: Women constitute <15% of faculty in physics/astronomy.
- Research Careers: Leaky pipeline effect—many women drop out post-PhD due to family pressures or lack of opportunities.
- Employment and Leadership
- ISRO: Women constitute ~20% of scientists, but few in core physics/astronomy roles.
- AIIMS & Medical Physics: Higher representation due to perceived "softer" science stereotypes.
- Academic Leadership: Very few women head physics departments or research centres.

Policy and Governance Frameworks

- Vigyan Jyoti Scheme (DST): Encourages girls in Class 9–12 to pursue STEM.
- KIRAN (Knowledge Involvement in Research Advancement through Nurturing): Provides career re-entry options for women scientists.
- Women Scientists Scheme (WOS): Funds research projects for unemployed women scientists.
- Gender Advancement for Transforming Institutions (GATI): Aims to improve gender equity in STEM institutions.

Institutional Policies

- IISc and IITs: Some have gender cells, but implementation is weak.
- TIFR's Gender Parity Committee: Actively works on recruitment bias and workplace culture.
- Private Sector: Companies like Infosys and Tata have STEM scholarships for women but focus less on physics/astronomy.

Challenges in Policy Implementation

- Tokenism: Few women hired for diversity metrics without systemic support.
- Lack of Enforcement: Many policies exist on paper but lack funding/monitoring.
- Cultural Resistance: Deep-rooted biases in academia and research institutions.
- Sociocultural and Structural Barriers
- Family and Societal Pressures
- Early marriage expectations deter higher education.
- Lack of support for women pursuing fieldwork (e.g., telescope observations).

Workplace Challenges

- Sexism and Harassment: Few formal complaint mechanisms in academia.
- Lack of Role Models: Few women in senior positions to mentor younger scientists.
- Work-Life Balance: Maternity leave policies exist, but childcare support is minimal.
- Regional Disparities

- Urban vs. Rural: Urban women have better access to education, but rural women face infrastructural gaps.
- South vs. North India: Southern states (Kerala, Tamil Nadu) have higher female STEM participation than northern states (UP, Bihar).

Global Comparisons and Lessons for India

- Sweden's Parental Leave Policy: Encourages shared childcare responsibilities.
- UK's Athena SWAN Charter: Awards institutions for gender equity efforts.
- US's NSF ADVANCE Programme: Funds systemic change in academia.

Adaptable Strategies for India

- Mandate Gender Audits in research institutions.
- Expand KIRAN to include postdoc and faculty-level re-entry programmes.
- Promote Women-Led Research Consortia (e.g., all-woman astronomy teams).

Recommendations for Policy and Governance

Government-Level Reforms

- Strengthen GATI with stricter enforcement and funding.
- Reservation in STEM Jobs: 30% quota for women in research positions.
- National Database for Women Scientists to track career progression.

Institutional Changes

- Blind Recruitment to reduce bias in hiring.
- On-Site Childcare at universities and research labs.
- Anti-Harassment Cells with independent oversight.

Cultural Shifts

- School-Level Interventions: Encourage girls in physics through role models.
- Media Representation: Highlight women scientists in mainstream media.
- Male Allyship Programmes: Engage men in gender equity discussions.

Conclusion

While India has made progress in promoting women in science, physics and astronomy remain male-dominated due to systemic and cultural barriers. Stronger policy enforcement, institutional accountability, and societal change are needed to achieve gender parity. By learning from global best practices and addressing India-specific challenges, the country can unlock the full potential of its women scientists.

References

Department of Science and Technology (DST) Reports.
 UNESCO's Women in Science data.
 Case studies from IISc, TIFR, and ISRO.
 Interviews with Indian women physicists/astronomers.

Multi Sectoral Gender Exclusion that Inhibit Inclusion: Can Gender Responsive Budgeting Tool Use Digi-Tech to Bridge the Divide?

Dr. Purnima Chauhan

The term “Gender and inclusion” is mystifying! ‘Gender inclusion’ makes for a sufficiently wide target that is beset by multi-pronged “exclusions” in complex sector specific intersectionalities! “Women’s exclusion” stems from an ecosystem that has systematically disabled rather than enabled them to explore the world beyond the home & hearth being trapped in their biological role and unequal social or gendered responsibilities. The stark burden of this unpaid care economy chores chews all her 24 hours. Exploring her latent potential beyond the threshold of the house becomes impossible and being ‘house bound’ is conveniently enshrined as a virtue.

Do we value women as a multi-talented powerhouse resource? If yes, then empowering them should facilitate creating an enabling environment. But this BOYS’ CLUB outside the household seems to have a permanent HOUSE FULL sign signifying ‘no entry” for the fairer sex! Patriarchy and misogyny are the socially appointed “bouncers” to ensure that women do not dare to go “where no man has gone before”!

Today the Sustainable Development Goals (SDGs) proclaim that there is no sector that is gender neutral including new arenas of concern like technology, IoT, climate change, conflict areas. Women are impacted and through sheer tenacity of purpose have stormed diverse male bastions by attaining enough escape velocity from sticky floors to break glass ceilings to prove their mettle. But just as one swallow does not make a summer so does one Indra Nooyi, Naina Lal Kidwai, Kiran Mazumdar Shaw of Biocon, Sunita Williams, Indira Gandhi, Malala can at best be icons but not game changers. Maya Angelou said it beautifully "*Each time a woman stands up for herself, she stands up for all women.*"

Yet the majority of unheard, unseen women at the bottom of the pyramid need social, economic, cultural, political, digital handholding to create a movement of change towards empowerment that overcomes centuries of their abject commodification, subjugation and vulnerability. This needs mindset changes that centre stage's gender equality through gender mainstreaming (GeM) using Gender Responsive Budgeting (GRB) as a policy tool. And GeM is possible only when one dons a gender lens to overcome pervasive gender blindness, biases, stereotypes that build bridges of trust and treat women as a valued resource. As Malala Yousafzai said, "*We cannot all succeed when half of us is held back.*" This is in sync with the overarching SDG inclusiveness of “leaving no one behind.”

Six feminist waves since the US Seneca Falls Convention of 1848 that translated into mainstreaming efforts like the Women in Development (WID 1950s), Women and Development (WAD 1970s) and finally Gender and Development (GAD, 1980 Anne Oakley) emphasised that men have to partner with women (and now the 3rd gender also) to ensure their success. This required dovetailing gender concerns into global indices of Economic Development or EDI, human development or HDI (fundamentally education and health sectors), Gender development or GDI, Environment Development Index (EnDI) and now the Technology Development Index (TDI). They all sync with the SDG 5 that espouses a multi-dimensional approach to gender

equality as no sector is gender neutral. Despite 10 years of SDGs lapsing these are now being pushed in India from Global frameworks to National Indicator Framework (NIF), State Indicator Framework (SIF) and the latest Local Indicator Framework (LIF) of the Panchayat Development Index (PDI) that condenses 15 of the 17 SDGs into 9 local government themes that includes “gender equality.” Unfortunately, no Urban Development Index (UDI) has been conceptualised despite India rapidly advancing from the current 32% urbanisation to 50% by 2050 that poses intertwined challenges of climate risks, inequality, and infrastructure stress. While emphasising feminist city development, Jane Darke laments that “our cities are patriarchy written in stone, glass, brick & concrete.” As urbanisation adds 63% to the national GDP projected to grow to 74% by 2030 SMAR cities that were perceived as “engines of growth” are increasingly turning into unliveable urban chaos. With 65% youth below 35, the World Cities Day theme highlights their pivotal role in shaping sustainable, gender sensitive urban futures.

The multiple dimensions of this hydra headed widespread gender inequality needs elaboration. India's population in 2036 is expected to be more feminine compared to the 2011 population, as reflected in the sex ratio which is projected to increase from 943 in 2011 to 952 by 2036, highlighting a positive trend in gender equality. One million women get elected to local bodies in India but is there adequate skill dev and capacity building of the elected female reps? Just over a decade ago in HP female elected urban representatives had never undergone any training to build their capacity to fulfil their political role. They were reluctant to travel even to neighbouring Chandigarh city for training until Urban Dept bore the cost of husbands accompanying them. It was not merely women’s election quotas but bridging the training gap that enabled them to articulate gender needs at the grassroots by being vocal for local, trying to understand their mandated role and becoming eager to connect the multiple tech dots and use this synergy to show impacts of empowerment. But in our diverse country centuries coexist making it really difficult for governance to find a lowest common denominator for targeting & parking gender policy reform as a game changer.

Despite India signing the Convention for Elimination of Discrimination Against Women (CEDAW) in 1980 yet as per World Economic Forum (WEF) the Global Gender Gap Index (GGGI) 2023 places India’s gender inequality index (GII) at 157/161 countries- lower than many neighbouring countries. Indian HDI is impacted negatively when public health spending comprises only 1% of India’s GDP or 3.64% overall health sector expenditure as against the global average of 9% of GDP. Our 60% out of pocket health expense leaves the vulnerable population bereft of healthcare. Education comprises 2.9% of India’s GDP expenditure despite the National Education Policy (2020) recommending a minimum 6% spending needed! Despite “beti Bachao beti padao” beti atmanirbhar nahi bane (a girl child is not self-reliant), and girls continue to be denied adequate education and health access. No wonder that “poverty has a woman’s face”—“of the 1.3 billion people in poverty, 70% are women” (1995 HDR).

An analysis of the multi-sectoral gender exclusions will shed light on the gender gaps that the tool of GRB can perhaps use along with Digi-tech to efficiently bridge centuries of women’s disempowerment with Substantial Equality rather than mere Protectionist Approach or Formal Equality that cannot meet the aspirations enshrined in SDG 5.

Domestic Exclusions: Unequal Burden on Women of Unpaid Care Economy

Women do 2/3rds of the world’s work; But get 1/10th of income accrued; They are 2/3rd of the global illiterate and own merely 1/100th of property.

Women in India do 9.8 times as much unpaid care and domestic work as men as compared to the global average of 2.6 times. Recently women in Iceland (that ranks the lowest on gender inequality) went on a week-long strike to protest against this unequal burden bringing the country to a halt!

In last 20 years women's time spent on unpaid care and domestic work fallen marginally while men's share has increased by just eight minutes a day. At this pace of change, it will take more than 200 years to achieve equality in time spent in unpaid care work (ILO 2019). estimates that at the current pace it will take just about 257 years to bridge the gap in terms of economic participation and opportunity between men and women (WEF, 2019).

All unpaid care work equals annual turnover of USD 10–12 trillion, 43 times the turnover of APPLE or 13% of global GDP (Mckinsey). At HP Institute of Public Administration (HIPA) in 2006 a pioneering estimate was made of HP women's contribution to the State GDP by monetising their unpaid care economy. It showed their contribution to be nearly 12% in 2005–2006 that jumped to 17% in 2017. But despite being the first State to have generated this data it was not analysed for GeM in HP assuming that “all is well” with women here!

Rural Women headed Kenyan farmers' work being surveyed and apathetically nullified as the surveyor could not wrap his head around women being successful innovative farmers to be awarded.

Amartya Sen cites a 1971 nutrition handbook that prescribes lower calories for women's care work classifying it as **sedentary!**

Exclusions—Violence Against Women (VAW)—VAW Severely Shifts Power Relations Against Women

Bhanwari Devi, Nirbhaya, Hathras, Kukis, Bilkis Bano, are women who paid an unimaginably horrific price for seeking justice or just stepping out in a man's world! Women are not safe even in their households. Nearly 40% cases go unreported instances, perpetrator is mostly a known person. VAW is one of the biggest threats to women who are working, using public transport, within the workplace and of course within the household despite the 2005 *Domestic Violence Act*.

- Every 26 minutes a rape; Every 42 minutes sexual harassments; Every 93 minutes a woman is killed;
- Female Genital Mutilation (FGM) accounts for over 240m female victims globally;
- The Shadow pandemic of VAW during covid 2020 made 243m women aged between 15–49 victims of sexual assault.
- In a shocking news report even, a sitting Indian female judge asked CJI's permission to commit suicide due to relentless sexual harassment at workplace.
- Women's Dozen Movements- Of Amartya Sen's one million missing women, 50% are feticide casualties from India. These abhorrent practices have led to movements like One Billion Rising against VAW, SheRises, MeToo, Times Up, suffragette, Chipko, Narmada Andolon and many more post Nirbhaya in 2012.
- Global cost of VAW estimated in 2017 at 1.5 trillion US dollars. In 2019, the UN estimated that it would cost USD 264 billion to end the worst gender injustices: violence against women and girls, child marriage, female genital mutilation, preventable maternal deaths

and the unmet need for contraception. So far, only 16% of the required funding has been pledged.

Exclusions: Women & Political Empowerment

With the 106th amendment, Indian Nari Shakti Vandan Adhiniyam (2023), political quotas for women now exist from parliament to local bodies. Despite 33% women's quota in assemblies and parliament yet less than 14% female representation in lower house vs. a global average of 22% reps.

With 44.4% women in local governance India is one of 18 countries to cross 40% out of the 117 countries with available data since 2017. Yet patri & sasur Pradhan dichotomy prevails.

The 2014 Indian elections marked a significant change, with women's participation increasing from 60% to 65.6%, and further rising to 67.2% in the 2019 elections. For the first time, the voter turnout percentage was marginally higher for women, highlighting the impact of increasing literacy and political awareness among women.

Exclusions—Women & Financial Inclusion

India has the unenviable distinction of being the only country with an economic gender gap larger than the political gender gap!

Better financial inclusion is evident as 56% of the newly opened accounts are being held by women. Direct Benefit Transfer & Jan dhan, AADHAR, Mobile (JAM trinity) has facilitated access to government subsidies, pensions, and other benefits directly into women's bank accounts, reducing leakages and empowering them economically.

Schemes like Mudra Yojana have provided women with easier access to loans, fostering entrepreneurship, particularly in rural areas. Yet women make up 60% of the unbanked adults in India.

As per FINDEX 2017, 23% of adult women in India lack access to financial services. 71% of women led micro, small and medium enterprises with no prior history of formal loans before the Covid-19 pandemic (not NPAs) reported that they were considered ineligible for Atmanirbhar benefits! Trust Deficit among lenders doesn't allow women to realise their dreams or potential.

It is estimated that Indian public sector banks could attract INR 250 billion in deposits by serving 100 million low-income women across the country. DESPITE the JAM push the bankers thwart loaning without collateral which is near impossible as women hardly own property. Often the relatively high transaction costs incurred by banks to process small loans demanded by women SHGs is a hurdle.

Exclusions—Women, Judiciary, and Police

"Frailty Thy Name Is Woman," said the Bard! Despite many Indian women centric legal protection measures, like POSH, Vishakha guidelines, etc., violence against women continue to prevail in the country. Roop Kanwar was burnt on her husband's funeral pyre in 1987, nearly 160 years after abolition of Sati practice in 1829 with the 8 perpetrators getting away scot free. Such

horrific practices seem to find traction socially and politically due to embedded misogyny! Echoes of such injustice were also seen in the cases of Bilkis Bano, Nirbhaya, Hathras and numerous others. Institutions like judiciary & police that were meant to safeguard women often fail them.

A 1996 survey of 109 judges revealed their mindset when 48% believed that husbands slapping wives was ok and 74% believed it was women's duty to preserve family concerns even if they faced violence! Fortunately, 2 decades later in 2016 a landmark observation by APEX court of India reversed this bias by declaring that "there is a bi-directional relationship between women's empowerment & economic development."

And now ex-CJI Chandrachud on 15th August 2023 launched a gender dictionary to guide the judiciary as language constructs were perpetuating biases, stereo types and impacting judicial outcomes.

Exclusions—Women's Workforce Reality

Aiming for 50% female participation in labour force can boost any region of the globe by 8% hike in GDP. Over last 15 years India's falling female labour force participation (FLFP) from 49% in 2004–2005 to 29.4% in 2021–2022 despite the general economic growth trajectory is a serious concern especially as our neighbouring countries show an upward trend in FLFP while we decline. Inhibiting Glass Ceilings and Sticky Floors are among multiple reasons for this downslide. The unequal burdens of unpaid care work are evident in the "motherhood leadership penalty" where only 10.2% female managers vs. 89.8% men had children below 6 years and 16.3% female managers vs. 83.7% men had no children while the corresponding global average is 25% and 31% female managers.

Women in Unorganised Sector: Nearly 82% or 151 million women work in the Indian unorganised sector without benefits that accrue in the organised arena. They constitute 52.7% of all unorganised Indian registered workers totalling more than the population of Russia (e-shram 2022).

Despite Atmanirbhar Abhiyaan and JAM women-led micro and small enterprises remain outside the fold of digital financial services with only 29% women account holders in India using digital payments compared to 42% of male account holders.

The Department for Promotion of Industry and Internal Trade (DPIIT) has recognised a total of 1,17,254 start-ups since its inception in January 2016 up to December 2023. Among these, 55,816 start-ups are led by women, constituting 47.6% of the total recognised start-ups signifying the growing contribution of women entrepreneurship in India.

Indian Women in Tech: The Future Must be Co-Created

Technology, by itself, does not empower. What truly empowers are the systems of access, inclusion, and ownership that surround it. Aiming for "A gender-diverse workforce needs bridging the prevailing TRUST DEFICIT. TRUST isn't soft; it is a strategic currency of modern organisations. Research has shown that companies with a more gender-diverse workforce are 15% more likely to outperform their less diverse counterparts (Teamlease Digital). One of India's

largest IT companies, HCL Technologies, recently launched its iBelieve initiative, which is a second career programme designed for women who have taken a career break and are now keen to rejoin the workforce. HCL already provides flexible working, daycare facilities, 'pink parking' and work-from-home options for improving the work-life balance of its women employees. More such Environmental, Social, Governance (ESG-BRSR) compliance by corporate is needed.

The IT sector has the highest representation of women in the workforce with 30% female participation. Financial services companies ranked second with 22.4% female participation during the financial year 2021-22. (CFA Institute voluntary Business Responsibility and Sustainability Reporting {BRSR} disclosures by 134 companies). In contrast, the FMCG and industrial sectors have the lowest representation, with only 5.5% and 4.3% female participation, respectively. Diversity is crucial for fostering innovation and driving success.

India's IT-BPM industry currently employs nearly 3.9 million people, and over 34% are women (i.e 1.3 million). While this percentage is much better than the overall female share (24%) of India's total workforce, an analysis indicates that over 51% of entry-level recruits are women, over 25% of women are in managerial positions, but less than 1% are in the C-Suite.

Despite decline in female labour force participation (FLFP) from 49% in 2004–2005 to 29.4% in 2021–2022, access to technologies such as mobile phones and computers increases women's chance of finding work by 6.3% and active use of tech increases it by 9.1% helping women enter and remain in the labour force.

The 43% STEM Indian women graduates are the highest in the world. Yet they find only 14% STEM jobs with the rest lost in the "leaky pipeline." Women quitting STEM fields at higher rates than men due to lack of supportive structures, safety concerns, and gender stereotypes. Despite such roadblocks it was women scientists who identified the South point for Chandrayan success.

The field of cybersecurity also offers women a chance to safeguard digital assets and protect sensitive information. Roles including security analyst, security engineer, and ethical hacker are among the popular choices for women.

Cloud computing is another tech area where women are in high demand. Due to the cloud adoption acceleration, roles like cloud architect, cloud engineer, and Dev Ops engineer are becoming the most sought-after roles.

Further, even as AI and ML are reshaping industries, from healthcare to finance, women are stepping into roles as AI research scientists, ML engineers, and NLP specialists, developing intelligent systems and automating processes.

Women are also excelling as UX/UI designers, crafting intuitive and aesthetically pleasing digital interfaces. These roles require creativity and technical knowledge of design tools like Figma, Sketch, and Adobe XD.

Despite the evident potential of digital technologies, large segments of the population in developing regions remain excluded from the digital sphere making the "Digital divide" virtually a 5th caste in our caste system! This divide is particularly pronounced in developing countries where Limited infrastructure, unaffordable internet access, inadequate digital literacy, and

entrenched social inequalities are barriers that impede participation of large portions of the population from the benefits that digital platforms can offer (Jensen, 2019).

Women in low-income regions, on average, are 16% less likely to use mobile internet than men, with the gap being even wider in rural areas (GSMA, 2021). This digital divide limits women's ability to access critical services such as healthcare, education, and financial services and curtails their participation in online civic and political activities widening the persisting gender-based inequalities in society. Digital platforms need to be customised to social & political needs for encouraging wider adoption especially by vulnerable groups.

Digi-Literacy Platforms for Women

The "SheMeansBusiness" initiative by Facebook and the Pakistan-based NGO "Code to Inspire" aim to bridge the digital gender gap by providing digital literacy training and online entrepreneurship programmes to 5000 women in Afghanistan. Bangladesh "One-Stop Digital Centres" impart skill training. Australian government's "Digital Inclusion Initiative" by in collaboration with local NGOs develops digital content in indigenous languages and training local communities in digital literacy. "Zimbabwean Digital Inclusion Initiative" faces trust issues. "Open Digital Platforms for the Commons" is a rural Latin American initiative.

Tools for Gender Parity: Gender Responsive Budgeting (GRB), Gender Mainstreaming (GeM) Using Gender Disaggregated Data

In the 1980s-90s global attention was drawn to the fact that normal budget dispensations were inequitable as they had differential impacts on men and women. This was happening due to lack of women's participation in budgetary process, policy, strategy of need identification that needed to be evidence based with gender disaggregated data. cursory audits had revealed this unintended differential impact of prevailing budgetary process that needed to become gender sensitised or engendered in every sector. With the huge multi-sectoral impact area of budgets, the likelihood of mainstreaming gender concerns everywhere was possible only if the budgetary exercise became gender responsive. The challenge lay in identifying sector specific gender needs from the grassroots and upscaling them until they were dovetailed into sector budgets.

The outcomes of this process were to be summarised in the annual output report called Statement 20 that was to be appended to the regular budget document. Statement 20 would state the sector specific financial and physical achievements of the engendered budget for all schemes as no sector was gender neutral. This vision was implemented by the Indian Union govt in 2005 in 13 ministries by diverting the 30% women's component plan budget to meet gender budgeting needs. This was just the tip of the iceberg. As the initiative matured it became evident that gender blindness, patriarchal structures and weak participation by women would threaten any culling of their needs for mainstreaming to bridge long persisting critical gaps.

Even today the Statement 20 of many States is a routine listing of expenditure incurred without elaborating an audit of the gender needs identified and fulfilled. Feedback loops to help such evaluation are missing rendering this reform almost meaningless. Only 13% countries dedicate budgets for gender statistics; Only 15% have legislation to mandate gender surveys; Only 41% regularly produce data on VAW; No survey done but property owned by women is

minimal (NFHS limited survey 2015-2016 does have some results); for meaningful Monitoring and evaluation there is a crying need for Gender Audits using Gender sensitive indicators (SSA).

Investment in women within MWCD (ministry of women & childcare) is only 3% for women; of 33 Ministries, women's budget constitutes 4.5% of the total budget (2015). Yet the following gender sensitive initiatives show tentative steps being taken towards gender inclusion.

Gender Sensitive Inclusive Measures: Unshackle Women and Everyone Wins

Kerala's low floor buses improve mobility for aged, pregnant women, disabled and children. The Andhra Pradesh pioneered women's crisis centres. But nationwide only 120 have opened despite norm of 1 in each of the 780 Indian districts.

Zimbabwe free childcare led to more female worker participation.

Gujarat Chiranjeevi scheme reduced MMR significantly. Delhi free bus travel for women has enhanced their work access and disposable income.

HP reduced stamp duty for women to encourage their land ownership.

Access to free public childcare in Rio de Janeiro, Brazil, increased low-income mothers' employment rates by 27%. In parts of Zimbabwe, providing access to an improved water source could reduce women's average unpaid care workload by 4 hours/day or 2months/yr. Nearly 1000 companies in 15 countries with more female workers reportedly are likely to have 25% better economic returns.

Research in six middle-income countries shows that investing 2% of GDP in strengthening health and care services could generate between 1%–3% growth in overall employment. This is 13% more jobs than if the same sum was invested in the construction industry.

SEBI's 2015 directive to have at least one female board member is now yielding results.

Women's impact on climate change-project drawdown estimated 85 gigaton carbon reduction if women were empowered enough to decide family planning issues exercising rights over their bodies.

Conclusion

Examples abound globally and locally of how gender exclusions are being identified and tackled to become inclusions. Wherever gender sensitised policy is maturing in the use of tools like GRB to create enabling environments within which women flourish results are visible (Malmo- Sweden, Citizen's panel fostering bottom's up direct democracy; Malmo citizen's participation in Spatial town planning, etc). Yet to reach the tipping point of gender parity, if not the Utopia of gender equality, there is need to replicate these learnings to combat deep seated obstacles posed by patriarchy. Social mindset change is a hurdle everywhere. It remains to be seen how the spread of Digi-tech can accelerate the pace of change to a more inclusive world that prospers from such equity.

Building Foundations Before Finance: Rethinking Muslim Women's Economic Empowerment in India

Rubina Nafees F.

Each year, the Indian state announces a new slate of schemes designed to unlock the promise of entrepreneurship: collateral-free loans, formalisation portals, subsidies, startup incentives. In the policy imagination, credit becomes the universal solvent that can dissolve unemployment, especially among women. Yet, for the countless women who run India's teeming ecosystem of informal micro-enterprises—the street vendors, home-based tailors, small shop owners—these schemes remain distant and abstract. Especially for women from structurally excluded backgrounds like Muslim or Dalit communities, the schemes exist on paper but are barely tangible in practice.

The problem is not that credit is absent; it is that credit is inaccessible, an offering made in the absence of basic foundations like digital literacy, financial discipline, and credit readiness. Without these, credit remains but a tantalising promise that many women simply cannot access, let alone leverage.

On the surface, the numbers suggest progress. In 2023-24, women accounted for over 42 million loan accounts under the Pradhan Mantri Mudra Yojana (PMMY), the government's flagship scheme to provide collateral-free loans to micro-enterprises. Yet, the ground reality exposes the hollow core of these figures. As journalist Aditya Pittie writes in the *Indian Express* (July 20, 2025), while women may hold the majority of Mudra loan accounts, the actual amounts sanctioned to them remain modest compared to their male counterparts. The gender credit gap persists as a 35% shortfall in credit for women-led MSMEs compared to men.

Formalisation efforts fare no better; the Udyam Assist Platform, created to formalise informal micro-enterprises and make them eligible for priority sector lending, has registered 1.86 crore IMEs, with over 70% of them women owned. But here too, formalisation becomes a performance, an exercise in being counted without being seen. The Global Gender Gap Report 2025, cited in The Hindu's editorial by Poonam Muttreja and Martand Kaushik, reminds us that India ranks 131 out of 148 countries, reflecting a stubborn gap in economic participation and access to financial systems. As our policy interventions accumulate, our women remain stranded on the periphery of accessible credit.

Nowhere is this more visible than in the case of Muslim women, who confront the double bind of gendered and religious marginalisation. The Sachar Committee Report (2006), while dated it still the most comprehensive diagnosis of Muslim socioeconomic status, and found that in Muslim-majority districts, bank account penetration is 12% lower than in other areas, and priority sector lending lags by 25%. Moreover, financial flows to Muslim communities from institutions like NABARD and SIDBI remain negligible. The report paints a picture of poverty among Muslims pegged at 67%, and over 90% of workers trapped in the unorganised sector.

These are data points still persist today, echoed in newer studies on Islamic finance in India. In their 2021 study, Siddiqui, Naushad, and Farooque argue that financial exclusion among Muslims is compounded by the religious unsuitability of conventional, interest-bearing financial

products. Islamic finance, structured around profit-sharing and interest-free models like Murabaha and Qard al-Hasan, offers an alternative—but remains largely absent from India’s formal financial system. In the state of Kerala, where Islamic finance has had limited presence, studies show that these models are overwhelmingly preferred by the poor, the unemployed, and those from the Muslim community. This is not just a question of faith, but of access structured through faith-based exclusions. There is also a deeper disconnect between the concept of interest-based finance and ethical (interest-free) finance. At the grassroots, a dissonance exists between perception and reality—while many organisations advocate for interest-free models, in practice, informal moneylenders charging exorbitant interest remain prevalent and accessible.

Even when credit exists, another barrier emerges—digital illiteracy and weak financial habits. The assumption embedded in policy is that all borrowers stand equally prepared to navigate formal finance. But Divyanshu Pandey’s 2024 research on digital entrepreneurship shows that while digital platforms can empower, the digital divide of access, fluency, and usage keeps many women locked out of these opportunities. For a woman with no smartphone, no access to online banking, and no familiarity with digital payment systems like UPI or GPay, credit remains abstract. The financial system remains a machine that fails to recognise her, to assess her needs, or to serve her.

This is where the development sector—NGOs, civil society organisations, social enterprises—must intervene. Organisations like SEWA have long understood that empowerment begins not with loans but with habits; with teaching women how to save, build credit history, and navigate the state’s labyrinthine welfare entitlements. As part of their recent digital and financial literacy drive, SEWA is equipping women with tools to participate not just in the economy, but in the digital ecosystem that increasingly defines it. They understand that without such preparation, the state’s credit schemes merely formalise exclusion.

The Mann Deshi Foundation’s Business Schools on Wheels is another example of an intervention tailored to women’s lived realities. By bringing business and digital literacy directly to rural women, these mobile schools overcome barriers of mobility, geography, and time. These interventions do not wait for women to find the system but bring the system to them, in forms that are legible and usable.

Similarly, many Micro Finance institutions and tech-enabled social enterprises, helps women navigate government welfare programmes and financial products, demystifying the bureaucracy that often acts as a gatekeeper rather than a facilitator. These organisations are not just building capacity—they are building visibility, creating the data trails that formal finance needs to recognise potential borrowers.

Yet, even with these models, capacity-building is often treated as a peripheral exercise—the responsibility of an NGO, rather than an integral part of the state’s financial inclusion strategy. This is short-sighted. The fintech revolution, much celebrated for democratising credit, is similarly structured around those already legible to digital systems. Lendingkart, Kinara Capital, Aye Finance—all offer credit without collateral, but rely on alternative credit scoring based on digital transactions, business data, and psychometric assessments. But the IFC’s 2017 MSME Finance Gap Report noted that systemic biases persist: women need more documentation, undergo more scrutiny, and often remain outside the data ecosystems that feed these algorithms.

Moreover, these solutions often refuse to acknowledge intersectionality. The reality of a Muslim woman running a tailoring business in rural Uttar Pradesh is incommensurable with that

of an upper-caste woman entrepreneur in an urban tech hub. Yet, policies and fintech platforms alike treat them as equivalent, erasing the social and cultural barriers that shape their economic realities.

Here, the promise of Islamic finance remains underleveraged. The SGIE Report (2025) advocates for expanding halal finance models, not as a cultural accommodation but as an economic strategy. India is home to the world's largest Muslim minority, yet lacks a formal ecosystem for Islamic finance. This is a structural omission—especially when such models have shown efficacy in other Muslim-majority countries in enhancing financial inclusion.

What might a more effective pathway look like?

First, the state must invest in pre-credit capacity-building as policy, not philanthropy. Every credit scheme from PMMY to Stand-Up India, should have integrated modules on digital literacy, savings discipline, and credit preparedness.

Second, fintech firms must build partnerships with grassroots organisations like SEWA, Mann Deshi, FWFB etc. These NGOs already have the community trust and access that fintechs lack. Working through them, fintechs can design inclusive credit scoring mechanisms, using alternative metrics like savings frequency, participation in SHGs, or even mobile phone usage patterns.

Third, India must formally integrate Islamic financial products into its policy architecture, not as symbolic gestures but as robust, regulated alternatives. Faith-aligned finance is not a niche—it is a necessity for true financial inclusion.

Lastly, the development sector must reposition itself not as facilitators, but as navigators of financial ecosystems. Women need guides who can help them choose not just any financial product, but the right product for their context—religious, social, economic.

If India is serious about closing its gender gap, and moving beyond surface-level statistics, it must stop mistaking formalisation for empowerment. A loan disbursed to a woman without digital access, without credit history, without a support system, is not empowerment—it is abandonment disguised as inclusion.

The real work begins before the first rupee of credit is even disbursed, in building the road that leads to finance.

Bridging Change: A Case Study on Digital Pathways to Economic Empowerment in India's Tribal Heartlands

Soma Wadhwa

(This case study examines GOAL, a digital mentorship programme for women from tribal communities in India, to showcase how access to technology drives economic engagement. It explores how digital tools, when paired with mentorship, help download confidence, upload economic agency, and network communities with leadership.)

In many parts of India, a young woman from a tribal community picks up a phone—and steps into a world larger than her village, richer than her routine, and ready to meet her halfway. The GOAL programme (Going Online As Leaders) is a part of that world, bringing with it mentors, digital tools, and a roadmap for economic empowerment.

Launched in 2019 by the Digital Empowerment Foundation (DEF), in partnership with Facebook and the Government of India's Ministry of Tribal Affairs, GOAL worked in five Indian states. It paired 100 young women aged 18 to 35 from tribal communities with 22 mentors—entrepreneurs, educators, professionals—who conducted regular digital sessions focused on leadership, digital literacy, and livelihood skills. Mentees were trained in the use of smartphones, digital safety, online navigation, and basic enterprise concepts, including accessing government portals and marketplaces. The programme was independently assessed for its impact by the India Development Foundation (IDF), which found compelling evidence of personal transformation and economic participation.

The evaluation's results confirm that GOAL's larger significance lies beyond its footprint. In a world where technology is often seen as neutral infrastructure, this programme reveals it to be something far more potent: a connector, a confidence-builder, and a catalyst for livelihood. Its core lesson is this: in today's world, technology does not just support empowerment—it variously activates it, amplifies it, and connects it to possibility. One cannot be separated from the other. And when they get together, the change is real—and measurable.

While 71% of mentees scored 9 or more out of 10 in the digital literacy test, deeper transformation was reflected in their aspirations: for instance, the number of mentees wanting to pursue higher studies doubled, and those aspiring to do social work increased by 44%.

Digital Mentorship: When Working Women Enter the Frame

For most GOAL mentees, structured, regular conversations with a working woman were unprecedented. Most came from families where no female member had held a formal job, run an enterprise, much less offered career guidance. Mentorship changed that. The programme's mentors were divided across 20 mentorship groups and were not just digital guides. They were role models—showing, not telling, what potential and opportunities could look like.

Across 519 documented calls between mentors and mentees, recurrent themes included building confidence, pushing against social expectations, and navigating digital spaces safely. One mentor recalled her mentees' persistent question: "Did your parents allow you to work?" The answer came not as parental permission that was bestowed, but as the outcome of everyday resolve and example.

Through stories of managing online consultancies while raising children, or running local campaigns with just a phone and determination, mentors introduced a world where action was the reply.

These were not modules. They were mirrors.

The Smartphone as Threshold: From Use to Ownership

In its earliest weeks, many mentees used their phones primarily to listen to music or take photographs. But by the end of the programme, those same devices had become platforms—for expression, income, and outreach. Young women were recording training videos, curating Facebook business pages, coordinating product deliveries via WhatsApp, and helping neighbours apply for online entitlements.

The transition was not incidental. The programme was unique in that it provided not just a smartphone but also a sense of purpose embedded within it. In Odisha, a mentee used her device and digital guidance from her mentor to register her weaving business and begin selling products online. In Jharkhand, mentees conducted surveys to identify families excluded from ration distribution during the COVID lockdown, and led relief efforts using funds raised by their mentor's NGO. In West Bengal, mentees promoted weaving crafts through social media.

Each act was a technical task. Each outcome was a social first.

Clicking into Confidence

According to IDF's impact assessment, the most cited benefit of the programme—selected as first choice by 76% of respondents—was “increased confidence.” Confidence, however, did not appear in isolation. It came through use, through recognition, and through small, repeated actions that changed how the young women saw themselves.

In Chhattisgarh, a mentee who once hesitated to speak volunteered to emcee a public event after digital training on voice projection and content framing. In Madhya Pradesh, another began teaching younger girls to use Google Forms and email for school admissions. “When I typed my first mail and got a reply,” she said, “I felt like I existed somewhere else—not just here.”

That sentence may well be the quiet centre of this programme. Visibility, in the digital realm, became presence in the real one.

Digital Skills to Making Money: Learning that Earns

GOAL did not assume that exposure would translate to empowerment. It built the bridge. Mentees were introduced to digital marketing, e-commerce platforms, government schemes, financial literacy tools, and basic bookkeeping. Mentors supported them in designing their first products, pricing their services, and building trust with early customers.

Some examples directly drawn from the impact report:

- In Maharashtra, a mentee began selling tribal embroidery via Instagram Stories and took digital payments.
- In Odisha, mentees created a sourcing group on Facebook Messenger to bulk-purchase raw materials at lower costs.
- In Jharkhand, mentees conducted surveys to identify families excluded from ration distribution during the COVID lockdown.

The impact report records that 68% of mentees reported starting an income-generating activity after the programme. Even more strikingly, 44% declared an increased interest in social work—signalling that their growth was not limited to earnings, but expanded into aspiration.

GOAL built entrepreneurs who were rooted, not removed, from their communities. Their exposure to the virtual world did not displace their sense of belonging—it sharpened it. Digital space became the mirror in which they saw the real needs of their villages, and the tools to meet them.

Gaps in Access, Risks to Upholding Dignity

Some findings indicated that challenges remain. Only 31% of mentees reported buying their own data recharge. Most relied on borrowed devices, shared accounts, or patchy connections. In many districts, sessions were repeatedly disrupted by weak networks or family restrictions.

These are not logistical hiccups. They are signals. Infrastructure, when dependent or denied, can undermine dignity. Women, young or not, cannot be expected to grow if their access is filtered, monitored, or dependent on permission.

Yet GOAL held steady where many digital inclusion efforts flatten. It refused to equate access with labour. It did not prepare women for low-wage, high-drudgery digital jobs. Instead, it nurtured learning that could lead to voice, and voice that could lead to value.

Changed Grammar, Visible Self

Over time, the way mentees described themselves shifted. What emerged was not a script—but a new grammar.

- “Now I help other women open accounts.”
- “I speak to the Sarpanch myself.”
- “My business is small, but I run it.”

These were not statements about scale. They were declarations of self. What GOAL enabled was not dramatic reinvention, but clear, sustained rearrangement—of what could be done, who could do it, and how.

The tools were digital. The shifts were structural.

Technology, Empowerment, Earning—A Three-Strand Thread

The GOAL programme offers a working model. One given to overcoming hurdles eventually, if nurtured. One that ties technology, empowerment, and economic agency together—not loosely, but in a three-strand thread that holds.

Its most enduring contribution lies in showing that none of these elements is interchangeable—or optional. Technology without dignity reduces agency. Empowerment without access stalls momentum. Economic inclusion without ownership builds dependency. But when all three strands are woven with care and continuity, what emerges is not just impact. It is infrastructure—for futures that women build with their own hands.

Whose Body Counts? Reconsidering Androcentrism in Indian Biomedical Research and Policy

Emaan Chimote

Former Intern, Centre for Development Policy and Practice

Student, Ashoka University

Biomedical knowledge—and the broader systems it inhabits—are structured around historically entrenched and exclusionary norms, principally the construction of a singular “default” body: male, cisgender, white, able-bodied, 5’10”, and weighing 70 kilograms (Gendered Innovations, n.d.). This standard, originating from Western biomedical paradigms, has diffused globally, including into India’s clinical trials, health data systems, and policy frameworks, where local specificities such as environment, diet, caste, or epigenetics are largely ignored. Consequently, women—who comprise over 48% of India’s population (Release of Publication “Women and Men in India 2023,” n.d.)—as well as transgender and intersex individuals, experience profound systemic invisibility in biomedical research and policy.

Central to this problem is the persistent conflation and confusion of sex and gender within biomedical systems: sex understood as biological traits such as hormones and chromosomes, and gender as the social, cultural, and institutional norms shaping lived experiences and health access. Bridging these concepts inadequately obfuscates how biomedical knowledge production often marginalises non-male bodies.

This essay interrogates how Indian biomedical research and related policies remain conditioned by the male-default model and the attendant consequences for non-male populations. Why has the cisgender male body been canonised as the scientific norm, and how does this shape diagnosis, treatment, and healthcare for women, transgender, and intersex individuals in India?

Drawing on feminist science studies, intersectional bioethics, and Science and Technology Studies (STS), this work uses a mixed-methods approach combining a critical literature review, policy analysis of Indian national health documents, and primary qualitative fieldwork with frontline health workers and NGO facilitators in Hyderabad. These perspectives reveal exclusion not as an anomaly, but a structurally embedded regime—manifest in biased research design, data politics, and lived realities of misdiagnosis, inappropriate treatment, and glaring care gaps.

Theoretical Frameworks & Methodology

Three intertwined frameworks anchor this critique:

- Feminist Science Studies (FSS) dispute the myth of scientific objectivity, exposing how notions of neutrality reinforce gendered, raced, and classed exclusions—denying marginalised groups epistemic authority and rendering their bodies invisible or “othered.” FSS emphasises standpoint epistemology, urging attention to power in knowledge production (Harding, 1986; Wainer et al., 2019).

- Intersectional Bioethics expands ethical scrutiny beyond consent to interrogate how intersecting social identities—caste, class, religion, gender—shape both research subjects and ethical parameters.
- Science and Technology Studies (STS) analyses how science and power shape one another, unmasking categories such as “male” and “female” as socially constructed artefacts that order bodies and resources in unequal ways.

Together, these frameworks shift the focus beyond mere representation toward exposing and reimagining the epistemic architectures that generate and uphold exclusion.

Multi-layered data sources include:

- A critical review of biomedical literature (global and Indian), highlighting how bias sediments in health knowledge.
- Policy and regulatory analysis of the National Health Policy (2017), Ministry of Health and Family Welfare (MoHFW) schemes, and Indian Council of Medical Research (ICMR) and Clinical Trials Registry of India (CTRI) guidelines.
- Data audits of NFHS-3, -4, -5 and Health Management Information System (HMIS) datasets, examining sex and gender categorisation and disaggregation.
- Actor mapping of institutional power brokers shaping research priorities and norms.

Fieldwork involves ethnographic focus groups and interviews in the Dar-ul-Shifa area of Hyderabad—a low-income Muslim-majority neighbourhood—engaging frontline workers (ASHA, ANM, Rehbar) and community advocates. Supplementary interviews with a public health researcher on gender bias in trials and a Kerala community health initiative founder broaden contextual understanding.

Epistemic Foundations of Male Default in Biomedicine

The male body’s ascendancy as biomedical norm is epistemic, not accidental. Policies like the U.S. FDA’s 1977 exclusion of women of childbearing potential from trials—revoked only in 1993—institutionalised a male-centric research paradigm that persists worldwide (Baskett, 2020; Liu & Mager, 2016). Preclinical research parallels this, favouring male animals due to perceived hormonal “complexity” in females (Beery & Zucker, 2010). Decades of male-centred data have skewed knowledge on metabolism, immune response, and disease progression, leaving non-male physiology underrepresented.

Caroline Criado Pérez’s concept of the “gender data gap” illustrates this absence beyond medicine—permeating areas like AI—where “neutral” knowledge often masks male-centred premises (Wainer et al., 2019; Harding, 1986). Medical evidence, while framed as objective, perpetuates epistemic injustice by marginalising varied embodiments (Fricker, 2007; Pérez, 2019).

Compounding this is the biomedical field’s inability to clearly distinguish sex from gender. Health outcomes emerge from biological and social intersectionality; a solely biomedical lens neglects how gender roles, poverty, and discrimination shape access and quality of care (Kim et al., 2024; Felner & Henderson, 2022).

Global Policy Shifts and India's Regulatory Inertia

North America, Europe, and parts of the Global North have enacted reforms to counter male default in research. The NIH's Sex as a Biological Variable (SABV) (2016) policy mandates inclusion and analysis of both sexes in research design. Canada's Gender-Based Analysis Plus (GBA+) links funding to rigorous sex/gender data use. The EU's Horizon 2020 enforces inclusive research standards (Arnegard et al., 2020; Kim et al., 2024).

Top journals like Nature and The Lancet require authors to disclose sex/gender considerations. Instruments such as the WHO's Gender Responsive Assessment Scale (GRAS) guide integration of gender analysis in health research and delivery (WHO, 2011).

Yet even these reforms see weak implementation. Globally, fewer than 3% of grant proposals systematically analyse sex differences (Holdcroft, 2006). Women's inclusion is often tokenistic, and transgender/intersex bodies remain invisible in research protocols and databases.

India's adherence to these models is partial and superficial. ICMR and CTRI guidelines vaguely mention "vulnerable populations" without mandating sex/gender disaggregation or inclusivity. National programmes claim gender neutrality, but default male norms remain unchallenged.

Institutionalising Androcentrism: The Indian Biomedical Landscape

India's biomedical system reiterates the global male norm while deepening exclusion via caste, patriarchy, and regulatory gaps. Gender is often reduced to reproductive biology or buried under nebulous "diversity" language (ICMR, 2017).

Clinical trials largely recruit cis men, rarely justifying female, transgender, or intersex exclusion. When women participate, protocols omit hormonal and reproductive context critical to drug efficacy and safety (Beery & Zucker, 2010).

Public health data like NFHS-5 rigidly binarise sex, erasing transgender and intersex populations (NFHS-5, 2020). While some states introduce "third gender" welfare categories, these remain limited, bureaucratic, and fail to permeate health data (Felner & Henderson, 2022).

This structural erasure manifests clinically: misdiagnoses and adverse drug reactions plague women, who are 50% more likely to be misdiagnosed for cardiac events due to male-calibrated diagnostics (Baskett, 2020). Diseases like PCOS and endometriosis receive inadequate research, and transgender/intersex health remains vastly neglected.

Ethics Committees focus narrowly on procedural consent, lacking community voices or epistemic equity mandates, permitting systemic gender bias to persist unnoticed (Felner & Henderson, 2022).

Intersectional Health Exclusions on the Ground

Fieldwork in Dar-ul-Shifa reveals these exclusions in lived complexity. Frontline workers—largely women from the community—describe intense workloads and gaps in gender-responsive training. Mental health and non-binary health remain unaddressed areas.

Women’s health is narrowly reproductive; other chronic or mental health issues are sidelined. Trans individuals often self-medicate or avoid care due to stigma and systemic invisibility. Health cards and biometric data systems erase gender diversity, undermining trust.

Interviews with Kerala-based activists highlight how even better-resourced systems struggle with gender stigma and cultural consent barriers.

These narratives expose how “universal” health programmes rooted in North Indian upper-caste male norms fail to serve India’s plural realities. Gendered exclusion is a question not of numbers but of recognition and structural responsiveness.

Reconfiguring Knowledge Systems: Pathways to Policy and Structural Reform

Dismantling this entrenched exclusion demands a paradigmatic shift, prioritising intersectional justice and localised specificity across three domains:

1. Data and Research
 - Mandate Sex- and Gender-Based Analysis Plus (SGBA+) for all publicly funded research.
 - Require comprehensive disaggregated reporting in CTRI, HMIS, and NFHS, including self-identified gender, caste, and disability.
 - Reform Institutional Ethics Committees to institutionalise community representation and assess inclusion/exclusion rigorously.
2. Programmes and Service Delivery
 - Train frontline workers in gender-responsive, culturally aware care well beyond reproductive health.
 - Systematically monitor gender-differentiated outcomes, adverse drug reactions, and psychosocial supports.
 - Adapt global gender analysis tools with community co-design to reflect India’s linguistic, religious, and caste diversities.
3. Institutional Governance
 - Embed gender and intersectionality centrally within the MoHFW, ICMR, and NHM programme design and evaluation.
 - Create cross-sectoral, independent accountability mechanisms with grievance redress and civil society oversight.
 - Forge lasting partnerships with feminist and grassroots organisations to co-produce knowledge and interventions.

Conclusion

The biomedical “default” male body in India is neither a neutral legacy nor mere oversight; it is the product of systemic design shaped by colonial, caste, and patriarchal logics. Exclusion is structurally encoded—reflected in policies, data framework, and service modalities.

The imperative is not just inclusion of marginalised bodies into existing regimes, but a radical epistemic redistribution: a justice-driven redefinition of whose knowledge validates health, whose bodies become legible, and whose experiences shape the metrics of care.

For a plural, unequal country like India, gender-inclusive, context-sensitive biomedicine is not a privilege—it is an urgent public health and ethical imperative. To ask whose body counts is also to ask whose knowledge heals. The just answer must be - all of them.

References

- Beery, A. K., & Zucker, I. (2010). Sex bias in neuroscience and biomedical research. *Neuroscience & Biobehavioral Reviews*, 35(3), 565–72. <https://doi.org/10.1016/j.neubiorev.2010.07.002>
- Baskett, F. (2020). Books: Invisible Women: Exposing Data Bias in a world Designed for Men. *British Journal of General Practice*, 70(694), 250–50. <https://doi.org/10.3399/bjgp20x709745>
- Felner, J. K., & Henderson, V. (2022). Practical strategies for health equity researchers to enhance analytic rigor and generate meaningful insights from qualitative data. *Preventing Chronic Disease*, 19. <https://doi.org/10.5888/pcd19.220134>
- Gendered Innovations. (n.d.). *Rethinking standards and reference models*. <https://genderedinnovations.stanford.edu/methods/standards.html>
- Holdcroft, A. (2006). Gender bias in research: How does it affect evidence based medicine? *Journal of the Royal Society of Medicine*, 100(1), 2–3. <https://doi.org/10.1258/jrsm.100.1.2>
- Indian Council of Medical Research. (2017). *National ethical guidelines for biomedical and health research involving human participants*. https://ethics.ncdirindia.org/asset/pdf/ICMR_National_Ethical_Guidelines.pdf
- Kim, H., Park, J., Ahn, S., & Lee, H. (2024). The impact of sex/gender-specific funding and editorial policies on biomedical research outcomes: A cross-national analysis (2000–2021). *Scientific Reports*, 14(1). <https://doi.org/10.1038/s41598-024-77018-0>
- Liu, K. A., & Mager, N. A. D. (2016). Women’s involvement in clinical trials: Historical perspective and future implications. *Pharmacy Practice*, 14(1), 708. <https://doi.org/10.18549/pharmpract.2016.01.708>
- Ministry of Health & Family Welfare, Government of India. (2017). *National health policy, 2017*. <https://main.mohfw.gov.in/sites/default/files/9147562941489753121.pdf>
- National Family Health Survey (NFHS-5)- 2019–20. (2020). *Ministry of Health and Family Welfare, Government of India*. <https://www.nfhsindia.org/nfhs-5.html>
- Pérez, C. C. (2019). *Invisible women: Data bias in a world designed for men*. Abrams Press.
- Release of publication “Women and Men in India 2023.” (n.d.). *Press Information Bureau, Government of India*. <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2044607>
- Wainer, Z., Carcel, C., Hickey, M., Schiebinger, L., Schmiede, A., McKenzie, B., Jenkins, C., Webster, J., Woodward, M., Hehir, A., Solomon, B., Costa, C., Lukaszuk, C., Colville, D. J., Dempsey, E., Wright, G. M., Mishra, G. D., Fisher, J. R., Kulkarni, J., ... Norton, R. (2019). Sex and gender in health research: Updating policy to reflect evidence. *The Medical Journal of Australia*, 212(2), 57. <https://doi.org/10.5694/mja2.50426>
- World Health Organization. (2011). *Gender mainstreaming for health managers: A practical approach*. https://iris.who.int/bitstream/handle/10665/44516/9789241501071_eng.pdf?sequence=1

Governing Council

G. Sudhir is a former IAS officer. He was Chairman of the Commission of Inquiry to study the Socioeconomic and Educational conditions of Muslims in Telangana.

Amitabh Kundu is a Professor Emeritus at L. J. University, Ahmedabad, a Visiting Professor at MANUU, Hyderabad, and a Trustee of Development Alternatives, Delhi. Formerly a Professor and Dean at JNU, he chaired key committees, including the Post-Sachar Evaluation, Diversity Index (Ministry of Minority Affairs), Housing Shortage Estimation (Urban Development), and Housing Start-Up (RBI).

Aalok Wadhwa is a management professional with over three decades of experience working in FMCG, online and social media content, publishing, and retail businesses.

Saleema Razvi is a Research Economist at the Copenhagen Consensus Center. She has previously served in organisations like Indian Council for Research on International Economic Relations, the Population Foundation of India, and UNICEF.

Abdul Shaban is a Professor at the Tata Institute of Social Sciences, Mumbai. He has been a member of the Post-Sachar Evaluation Committee, Chief Minister's High-Powered Committee on Muslims, Government of Maharashtra, and Sudhir Commission, Telangana.

Syed Adeeluddin serves as the Director of CDDP. In addition to his leadership role, he is a philanthropist and social worker, balancing his professional commitments with the responsibilities of his family's construction business. An engineering graduate from Osmania University, he also holds an MBA in Finance.

Neelima Khetan is a CSR and social sector professional with nearly four decades of experience. She is the Managing Partner at Nous Consultants and was a Visiting Fellow at the Centre for Social and Economic Progress. She has held leadership roles in Vedanta, Hindustan Zinc, and Coca-Cola India. With grassroots experience at PRADAN, Seva Mandir, and AIF, she also served as Acting Director at IRMA. An author and board member of several non-profits, she holds degrees from IRMA and SRCC.

Jeemol Unni is a Professor at Ahmedabad University and a former Director and RBI Chair Professor of Economics at the Institute of Rural Management, Anand. A specialist in labour economics, she serves on the Editorial Boards of the Indian Journal of Labour Economics and the Journal of Development Policy and Practice.

Sumaira Naser is a philanthropist, educationist, and environmentalist. She is a patron of the Telangana Science Fair Academy, which fosters scientific temperament among youth, and serves as an advisor at the International Women's Startup Corridor (IWSC), with a focus on promoting women's health.

Rathin Roy is a Visiting Senior Fellow at ODI, where he previously served as Managing Director. His research focuses on fiscal and macroeconomic issues in developing economies. He was the Director and CEO of NIPFP in New Delhi and has held key roles at the UNDP and the Thirteenth Finance Commission. Rathin holds a Ph.D and M.Phil in Economics from the University of Cambridge, an M.A. from Jawaharlal Nehru University, and a B.A. from St. Stephen's College, University of Delhi. He has also taught at the Universities of Manchester and London.

Research Team

Amitabh Kundu is a Professor Emeritus at L. J. University, Ahmedabad, a Visiting Professor at MANUU, Hyderabad, and a Trustee of Development Alternatives, Delhi. Formerly a Professor and Dean at JNU, he chaired key committees, including the Post-Sachar Evaluation, Diversity Index (Ministry of Minority Affairs), Housing Shortage Estimation (Urban Development), and Housing Start-Up (RBI). Min

Soma Wadhwa is a development studies researcher, with extensive experience as a media professional.

Nahia Hussain is Vice President (Policy Affairs) at CDPP with a Master's degree from National Law School of India, Bangalore.

Anjana Divakar is the Executive Director of Public Policy Research and Operations at the CDPP. She has a Master's degree in Public Policy from the Jindal School of Government and Public Policy.

Laldinmoi Pangamte is the Copy Editor, Publications, at CDPP. She has a PhD degree from the School of International Studies, Jawaharlal Nehru University, New Delhi.

Moumita Barman is a Research Associate at CDPP. She has a Master's degree in Public Policy and Governance from the Tata Institute of Social Sciences, Hyderabad.

Sejal Gupta is a Senior Research Fellow at CDPP, working on the Regulation Project across Emerging, Infrastructure, and Consumer sectors. She holds a Master's in Urban Planning (SPA, New Delhi), where she won the Prof. N.S. Saini Gold Medal, and a Bachelor's in Architecture (RV College, Bengaluru).

Manisha Dhulipala is a Senior Research Fellow at CDPP with 15+ years of experience in research and policy advocacy in public health, environment, and development. She holds an M.Sc. in Science and Technology for Sustainability (SPRU, University of Sussex), an M.Sc. in Environmental Sciences (Marathwada University), and a B.Sc. in Microbiology (Osmania University).

Lubna Ludheen is a Research Associate at CDPP. She has a Master's Degree in Public Policy from Mount Carmel College, Bengaluru.

Mohammed Ahmed is a Graphic and UI Designer with 20+ years of experience across industries. He has a bachelor's degree in Commerce from Dr. B.R. Ambedkar Open University, Telangana.

Mohammed Rahmath Ali is the Manager, Operations & Finance at CDPP. He has a degree in Commerce from Osmania University, Hyderabad, Telangana.

Iqra Ahmed is a Communications and Copyediting Associate at CDPP. She has a master's degree in journalism and mass communication from Dibrugarh University, Dibrugarh, Assam.

Arnav Panwar is a Research Fellow at CDPP. He has an undergraduate degree from FLAME University in Public Policy. He has previously worked as a research intern at TIDE, Bangalore.

Areeb Barr Abdullah is a Research Intern at CDPP. He holds a Bachelor's degree from Jamia Millia Islamia and a Master's degree in Geography from Dr. Ram Manohar Lohia Avadh University.

Organising Partners

Centre for Development Policy and Practice (CDPP): CDPP is a research group that focuses on development concerns and public policy challenges in the world today. Working with a team of research professionals and expert consultants under the guidance of eminent public intellectuals, CDPP conducts research studies, develops policy papers, publishes a peer-reviewed quarterly Journal, and hosts conferences in addition to regular seminars and workshops.

Digital Empowerment Foundation (DEF): DEF is a Delhi-based nonprofit organisation working towards empowering people to gain access to better healthcare, education, skills, and livelihood opportunities through digital literacy and digital tools. The organisation's main focus is to make technology easily accessible to the masses, and to empower women, youth, persons with disabilities, and the elderly through providing functional digital literacy, media literacy, and digital up-skilling across agriculture, micro and nano-business, health, education, livelihood, and entrepreneurial skills.

Centre for Women Studies, Maulana Azad National Urdu University (MANUU): Since its inception, the centre has been actively engaged in teaching, training, research, and extension activities. The centre aims to promote gender equality through education. Through these activities, the centre focusses on empowerment of urdu speaking women and on critical issues pertaining to gender equality at the community level.

Kautilya School of Public Policy, GITAM (KSPP): KSPP is a part of GITAM (Deemed to be University), Hyderabad, established in 1980. The school is dedicated to advancing the study and practice of public policy. Since its inception, the school has been actively engaged in offering academic programmes, research, and outreach activities aimed at fostering the development of competent policy leaders at international levels.

The Education Group (London) Ltd. (TEG): TEG is a leading recruitment partner and full-service consultancy specialising in the tertiary education sector. Since 2020, TEG has been the exclusive service partner of the University of the West of Scotland, London Campus, offering solutions in facilities management, global marketing, student recruitment, admissions, and enhancing the overall student experience through TEG Club.

Associate Partners

Jahangirabad Institute of Technology (JIT): JIT is a private engineering and management institute located in Barabanki, Uttar Pradesh, India. Established with the aim of providing quality technical and professional education, JIT offers undergraduate and postgraduate programs in engineering, management, and computer applications.

The Council on Energy, Environment and Water (CEEW): CEEW is one of South Asia's leading not-for-profit policy research institutions. Based in India, CEEW works at the intersection of energy, environment, and sustainable development. It is renowned for producing high-quality, evidence-based research and for supporting decision-making at the local, national, and global levels.

International Institute of Information Technology, Hyderabad (IIIT): IIIT is an autonomous university, founded as a not-for-profit public private partnership (N-PPP) in 1998, and is the first IIIT in India under this model. Over the years, the institute has evolved strong research programmes in various areas, with an emphasis on technology and applied research for industry and society. The institute facilitates interdisciplinary research and a seamless flow of knowledge.

OUR WORKING PAPERS

SERIES-2025

- Understanding the Regulatory Landscape in India: A Comprehensive Look at Consumer Sectors (Food Safety and Healthcare)
- Creating Institutional Excellence in India's Secondary, Higher Secondary, and Tertiary Education: A Case Study of MS Education Academy
- Understanding the Regulatory Landscape of Emerging and Infrastructure Sectors

SERIES-2024

- Understanding Communal Clashes During Religious Processions
- Unveiling Stigma: Addressing Menstrual Hygiene and Health in the Indian Context
- Workforce Participation in India: Where Are the Women?
- Diversity and Disparities: A Study on Caste, Religion, Gender, and Disability in Higher Education in India

SERIES-2023

- From Speech to Action—Exploring Hate Speech Origins, Impact, and Interventions from Multidisciplinary Perspectives
- The World's Biggest Country: India's Demographic Trajectory and Its Impact on Muslims, the Parliament and the Labour Market
- Agriculture in Telangana: From Plight to Pride
- Internet Control and the Rise of Discrimination in India

SERIES-2022

- Muslim Women: Tackling Vulnerability and Marginalisation
- How Healthy is our Young Population
- Educating Challenges: Quality and Inclusion
- Situating Development of Muslims in Uttar Pradesh

SERIES-2021

- The IT Industry in Telangana
- Why Do Young Urban Indians Vote the Way They Do
- Situating Development of Muslims in Telangana
- Tracing the Evolution of Citizenship
- Philanthropy in India
- Education Quality
- Tracking Discrimination
- COVID-19 and India
- Study on The IT Industry of Hyderabad
- India's Agritech Sector
- India's Healthcare Market
- Technology Aided Models

The Centre for Development Policy and Practice (CDPP) brings out quarterly working papers based on the research work being carried out here. These are published on our website www.cdpp.co.in and sent to a select group for review, comments, and critique.