THE INDIAN SOCIETY OF LABOUR ECONOMICS
ANNUAL CONFERENCE

66th

19-21 January 2026 | Symbiosis School of Economics, Symbiosis International (Deemed) University, Pune, India

Abstracts of
Conference Papers

Conference Themes

Technology, Innovations and Employment

Education, Employment and Labour Markets

Rural Transformation and Workforce Dynamics

Organised by

**The Indian Society of
Labour Economics**

Symbiosis School of Economics
Symbiosis International (Deemed) University
Pune

Deepika Chadha
Copy Editor

M.S. Arzoo
Designer

EDITORIAL TEAM

Overall Advisors

Alakh N. Sharma President, Indian Society of Labour Economic and Director, Institute for Human Development (IHD)

Praveen Jha Conference President 66th ISLE and Professor, Jawaharlal Nehru University

Jyoti Chandiramani 66th ISLE Organising Secretary and Director, Symbiosis School of Economics Dean, Faculty of Humanities and Social Sciences, Symbiosis International (Deemed University)

Editors Team

Lakhwinder Singh Visting Professor, IHD

Rajendra P. Mamgain Hon. Secretary, Indian Society of Labour Economics (ISLE) and Professor, Doon University, Dehradun

Taniya Chakrabarty Fellow, IHD

Vikas Dubey Senior Research Associate, IHD

Ranjan Kumar Dash Associate Professor, Symbiosis School of Economics

Deepa Gupta Associate Professor, Symbiosis International (Deemed) University

Niharika Singh Assistant Professor, Symbiosis School of Economics

Shuchi Benara Misra Assistant Professor, Symbiosis International University

Varsha Susan Mathew Research Assistant, IHD

Production Team

Priyanka Tyagi Chief Executive Officer, IHD and Communication Director, ISLE

Vikas Dubey Senior Research Associate, IHD

Anisha Yadav Research Scholar, Dr. B R Ambedkar University Delhi

Tanisha Vishwakarma Research Intern, IHD and Master's Student, Guru Gobind Singh Indraprastha University

Ananya Thakran Research Intern, IHD and Master's Student, Guru Gobind Singh Indraprastha University

CONTENTS

Theme 2
Education, Employment and Labour Markets

Technical Session 2.11

Theme 3
Rural Transformation and Workforce Dynamics

What Drives the Manufacturing Employment in Bangladesh?
Md. Tuhin Ahmed and Dipa Das

Employment in Forestry and Logging of India: A Disaggregated Analysis using Unit-Level Data of Periodic Labour Force Survey
Hanjabam Isworchandra Sharma and Lynda Thoudam

Do Workfare Programmes Improve Minimum Wage Compliance for Rural Informal Workers? Evidence from MGNREGA in India
Arindam Das

Self-Employment Dynamics in Rural India: Analysis using Periodic Labour Force Survey and Annual Survey of Unincorporated Sector Enterprises
Vaibhavi Subhash Pingale, Anurag Asawa and Santoshi Rajguru

Rural Transformation and Workforce Dynamics in India
Surjya Narayan Tripathy

Empowering or Distress-driven: The Recent Rise in Female Self-employment in Rural India
Avanindra Nath Thakur and Priyanshi Chaudhary

Social Identity and Structural Transformation in Rural India
Neha Bailwal and B. Satheesha

Women, Self-Help Groups, and Mechanisation: Understanding the Role of Custom Hiring Centres in Rural Agriculture
Itishree Pattnaik

Unequal Structural Transformation, Employment Shifts, and Development Outcomes in Indian States: Examining the Mediating Role of Government Expenditure
Sudhanshu Kumar

Gender-Wage Gap in the Agriculture Sector in India: Evidence from Periodic Labour Force Survey Data
Ranjana Roy and Sabarni Chowdhury

Revival of Gond Art: Self-Help Groups as a Catalyst for Feminist Reawakening
Niharika Singh, Sudipa Majumdar and Chandani Tiwari

Corporatising Domesticity? Reflection on the Work-from-Home Job Schedule
Arindam Roy

WORKSHOP SESSIONS

Workshop Session 3   311

Theme 1

Technology, Innovations and Employment

KEYNOTE PAPER

Technological Change and India's Quest for Innovation Leadership: Implications for Human Capital

Rishikesha T. Krishnan, Professor and Former Director, Indian Institute of Management, Bengaluru, Karnataka

Technological change offers both challenges and opportunities. On the one hand, it poses the threat of disruption of existing routines, risks to value creation and capture, and the fundamental restructuring if not loss of organizations and jobs. On the other, it provides the crucible for the emergence and transformation of enterprises and employment opportunities, and possibly leapfrogging and leadership.

Given its unique position as a large lower middle-income economy with a large and relatively young workforce, contemporary developments related to technological change are critically relevant to India. In particular, the rapid adoption of artificial intelligence in its different facets while offering the possibility of significant efficiency improvements and customization of products and services poses a significant challenge to the provision of meaningful employment opportunities to the millions of young Indians who enter the workforce every year.

In parallel, India has set the goal of achieving developed country status or becoming "Viksit Bharat" by 2047. Towards this end, and with a view to becoming self-reliant or "atmanirbhar" amidst geo-political flux, the country has launched a number of important initiatives including the creation of the Anusandhan National Research Foundation (ANRF); the Research, Development & Innovation Scheme (to support the development of critical technologies in strategic and sunrise sectors); and specific technology missions such as the Indian AI Mission, the National Quantum Mission, and the National Mission on Inter-disciplinary Cyber-physical Systems. These are in addition to existing platforms such as "Make in India" and StartUp India which were started earlier.

The success of these policies and programmes is closely linked to the development and availability of the relevant human capital. India's National Skill Development Programme and the National Education Policy provide the policy scaffolding on the human capital dimension.

In this paper, I take an integrative systems view of the above developments to identify critical trends with a view to shortlist human capital-related policy and action priorities towards India achieving innovation leadership in this period of rapid technological change.

TECHNICAL SESSION 1.1

Hybrid Labour Forces: Humans and Robots as Colleagues in Indian Restaurants

Ernesto Noronha Professor, Indian Institute of Management, Ahmedabad, Gujarat
Premilla D'Cruz Professor, Indian Institute of Management, Ahmedabad, Gujarat

This paper reports a multi-city and multi-site qualitative study involving observation, photo documentation, and in-depth and photo elicitation interviews, exploring the impact of robot waiters on front-of-house work organisation in Indian full-service, dine-in, family restaurants. Contrary to widespread claims that automation increases efficiency and productivity, the findings show that while the robots, as dollies, improved the restaurants' business through increased customer footfalls and customer delight, they complicated front-of-house work organisation. With the robots capable of operating essentially as trollies which could only deliver food to customers' tables, captains' and waiters' work was complicated due to the robots' limited functionality, slow speed, restricted movement pathway, and need for protection. Nonetheless, the robots aided human staff's continued employment, albeit of a non-standard nature, while adding to the latter's skill repertoire and self-esteem.

Managing Transitions in the World of Work in India: Demographic Challenges and Opportunities

Saurabh Sinha Formerly Chief, Social Policy, UN Economic Commission for Africa, Addis Ababa, Ethiopia

Rapid technological advancements and innovations are revolutionising industries and labour markets. Automation and digital technologies are taking over routine tasks and displacing workers from many low skill jobs. Analyses of recent employment shifts in the Indian economy reveal a consistent decline in the share of low-skilled workers across all sectors and their replacement by more skilled workers. Even though many innovations are also creating new employment opportunities, the transitions in the world of work have important implications for India which with the world's largest youth population, today stands at the confluence of a demographic transition and a technological transformation.

India entered the demographic dividend opportunity window in 2005-06 and is likely to remain there until 2055-56. Thus, with approximately 65 percent of its population in the working-age group (15-64 years), India has about 30-35 years left to leverage its demographic dividend before transitioning into an 'aged' economy when its proportion of working-age population is expected to decline. Adjusting to the new world of work requires social protection, especially in India where informal employment remains close to 90 per cent. This figure may even increase as with greater automation and adoption of labour-saving technologies, low-skilled workers are pushed to the informal sector with neither health insurance nor social protection.

The paper does three things. One, it reviews the extent and nature of the technological transitions and innovations currently underway in the world of work in India. Two, it analyses whether and to what extent these transitions will assist the country in achieving a demographic dividend. And three, it highlights the role of social protection in minimising the adverse consequences of the work transitions in India. The paper concludes that if managed well, India can use its current demographic profile to its benefit and minimise the labour displacing effects of technology and achieve a demographic dividend.

Understanding the Drivers and Patterns of Job Polarisation in the Indian Economy

S P Singh Professor (Emeritus Fellow), Indian Institute of Technology, Roorkee, Uttarakhand

Anjali Bansal Research Associate, NITI Aayog, New Delhi

Over the past few decades, the transformation of the structural composition of global labour markets due to rapid technological progress has generated complex and heterogeneous effects across occupations and skill levels, leading to a phenomenon widely recognised as job polarisation. Building upon theoretical foundations, such as the Skill-Biased Technical Change (SBTC) and the Routinisation Hypothesis, this paper investigates the nature, determinants, and empirical patterns of job polarisation in India, using data from the Employment and Unemployment Survey (EUS 2011–12) and Periodic Labour Force Survey (PLFS 2020–21).

The advent of digital technologies and automation has challenged the monotonic nature of SBTC, giving rise to the Autor-Levy-Murnane (ALM) task-based model, which classifies jobs not solely by skill but by task content, distinguishing between routine and non-routine tasks, and cognitive and manual tasks. According to the ALM taxonomy, routine tasks — whether cognitive (such as clerical work or data entry) or manual (such as assembly line work) — are most susceptible to automation. In contrast, non-routine tasks that require interpersonal interaction, creativity, or situational adaptability are complemented by technology rather than replaced by it. Subsequently, empirical studies expanded the theoretical model to account for cross-country heterogeneity in the degree and pace of polarisation. In developed economies, technological progress coupled with globalisation led to a marked decline in middle-skill

occupations between the 1980s and 2010s. In contrast, in developing economies, including India, this process has been less pronounced and more context-dependent due to differences in technology adoption, human capital formation, and the size of the informal economy.

This study offers a comprehensive empirical examination of labour market polarisation in India, employing both skill-based and task-based frameworks. It reveals the nuanced dynamics driving employment shifts across sectors, skill categories, and time periods. Furthermore, a shift-share decomposition analysis distinguishes the contributions of occupational versus industry-level structural changes in explaining labour market transformations. The paper analyses the five key driving factors of job polarisation: technological adoption, informal sector size, structural transformation, globalisation, and human capital availability. The study examines how technological and structural forces influence the evolution of occupational structures in India. It confirms that job polarisation is not a uniform or inevitable process, but instead is mediated by country-specific institutional, demographic, and economic contexts.

As India transitions further into a knowledge-driven economy, balancing technological innovation with inclusive human development will determine whether polarisation leads to widespread exclusion or a reconfiguration of work opportunities across the skill spectrum. The insights from the study underscore the urgency of integrating labour-market research with forward-looking policy design to ensure that technological progress translates into equitable and sustainable employment outcomes.

New Technology and Employment: Structural Challenges in Knowledge Intensive Technology Development under Capitalism

Satyaki Roy Associate Professor, Institute for Studies in Industrial Development (ISID), New Delhi

Human civilisation has entered a new phase of technological development marked by paradigm shifts in production with the use of new general-purpose technology such as artificial intelligence (AI). Technologies are meant to reducing human effort and therefore result in displacement of labour. But this need not be the necessary outcome at the aggregate as reduction in human effort in one segment might be partially offset by jobs created in complementary labour using sectors. Hence, the net effect depends on the magnitude and nature of displacement in technology using sector and the reinstatement effect in complementary labour using sectors. Most importantly, human needs are not static at a point; hence, reducing human effort to producing current needs may not be reducing human effort in absolute terms because additional efforts are being used to produce new needs. However, technology development typically disrupts existing production functions, and the resulting welfare effects are not often Pareto superior. Technological transformation invokes contestation, and the resolution of such conflicts depends on the distribution of technological gains. Historically, this is evident from the fact that Luddite movement in the early 19th century in the aftermath of the first

industrial revolution didn't repeat during the second industrial revolution that swept across Europe and the US in the late 19th and early 20th century.

In the context of the new technological wave, this paper argues that capitalism is likely to face three prong challenges pertaining to conflicts arising in the realm of production of technology, distribution of gains, and also rising inequality due to restricted access to skills. It is not the technology per se, but the intensifying conflict of these three dimensions may lead to unemployment of structural nature reflecting metabolic limits of capitalism. Technologies are supposed to reduce human effort, but they do not necessarily lead to rising unemployment. Instead they may reduce necessary labour time of those employed or even increase employment with less working hours. In the context of knowledge intensive technological development, the paper finally argues for a radical change in production structure towards greater collaboration and reciprocity, and an institutional structure that values human contribution to social output beyond profit motive.

Sustainable Innovations and Work at the Margins: Revitalising Handlooms by Tribal Women, Western Odisha

Keshab Das Visiting Professor, Institute for Human Development, and Adjunct Professor, Institute for Studies in Industrial Development, New Delhi

Sonal Jain Assistant Professor, School of Economics and Commerce, KIIT Deemed to be University, Bhubaneshwar, Odisha

In India, discussions on distress migration from tribal regions and absence of local economic development have emerged as significant questions in broad-basing opportunities in generating local income and employment. However for women in general, opting for entrepreneurship as a vocation has often been straddled with challenges both from the policy and societal angles reflecting both a statal myopia in creating avenues for large number of independent jobs and a reluctance of the truncated male-domineering attitude that fails to value women as capable business owners as well as job creators. Going by the geography of settlements, infrastructure deficiencies, a lack of connectivity to the wider market spaces, low access to formal education and skill training, tribal women are seriously disadvantaged to pursue a livelihood strategy of entrepreneurship that would also create opportunities of job creation in the local area. Additional constraints are created by the conventional perception regarding role of women as confined to the household and certain primary survival activities such as collecting firewood, fetching water from nearby waterbodies, fishing, tending domestic livestock, etc. Within the ambit of women entrepreneurship, there has been limited understanding about extant constraints in tribal areas as there have only been few analytical studies reflecting on policy inadequacy and constraints facing women in accessing certain key business-related facilities

including skill building, infrastructure, and loan finance from the formal sources. The need for introducing institutional innovations that would create entrepreneurship opportunities while ensuring sustainability remains centrestage as a larger challenge beyond generating a few jobs.

This study focuses on a specific intervention in creating an ecosystem of dyeing and weaving handlooms by tribal women in the Mayurbhanj district of Odisha. In a move towards bridging tradition and current demand, this venture blends traditional weaving techniques with contemporary designs and products by adapting olden styles to new preferences, while preserving the core cultural identity of the craft. It also leverages technology and e-commerce by taking recourse to digital tools and platforms to help weavers transcend traditional market barriers to access a wider consumer base. The initiative promotes business-enterprise skills, connects to marketing avenues and remains attentive to local socio-economic development including education, health, and nutrition of families of women entrepreneurs. Through this case study, an attempt has been made to enquire into issues at the ground level in reviving a local craft by engaging local tribal women to eke out a sustainable livelihood through product, process, and institutional innovations. Implications for policy and replicability have also been discussed.

Unlocking Women's Workforce Potential in India: Quantifying the Labour Market Impact of Formalising Part-time Employment and Gender Equality in Unpaid Care Work

Aakash Dev Associate Fellow, National Council of Applied Economic Research, New Delhi
Ratna Sahay Professor, National Council of Applied Economic Research, New Delhi

This paper investigates the labour market impact of formalising part-time employment and achieving gender equality in unpaid care work in India, where female labour force participation remains among the lowest globally. Using a continuous-time McCall–Mortensen job search framework with heterogeneous agents, we derive reservation wages for men and women, and quantify labour force participation under alternative policy scenarios. The model is calibrated with Indian data from the Periodic Labour Force Survey (PLFS), Consumer Pyramids Household Survey (CPHS), and the Time Use in India Report (2019). Baseline estimates show that women's reservation wage is substantially higher than men's, reflecting the unequal distribution of unpaid care responsibilities and the absence of formal recognition for part-time contracts. Under the status quo, these factors constrain women's labour market participation and exacerbate gender disparities. Simulation results demonstrate that introducing pro-rated, legally recognised part-time contracts and redistributing unpaid care responsibilities equally between genders can significantly reduce women's reservation wage and increase female

labour force participation by 6 percentage points, from 37% to 43%. The findings provide quantitative evidence that structural reforms in the labour market, combined with supportive social policies, could unlock considerable workforce potential. Key policy recommendations include: (i) formalising part-time employment with legal protections, (ii) expanding childcare and eldercare infrastructure, (iii) adopting paid parental leave and tax incentives for shared caregiving, and (iv) promoting flexible work arrangements. Overall, the study underscores the critical role of care economy policies and flexible employment structures in enhancing gender equity and sustaining inclusive economic growth in India.

TECHNICAL SESSION **1.2**

Urban Sustainability, Slum Vulnerability and Workforce Inequalities: A Dual-Scale Sustainable Development Goal-11 Assessment for Indian Cities

Alok Kumar Mishra Professor, University of Hyderabad, Hyderabad, Telangana

As India undergoes rapid urbanisation, the intersections between urban sustainability, access to education, labour-market participation, and economic vulnerability are becoming increasingly significant for inclusive development. This study presents a dual-scale analytical framework that links macro-level urban sustainability with micro-level workforce vulnerability, focusing on how city conditions shape educational opportunities and labour-market outcomes for urban residents, especially those from slum households. At the macro level, we construct four Sustainable Development Goal (SDG)-11 pillar indices, including inclusivity, safety, sustainability, and resilience, for 10 major Indian cities using the Shannon Entropy Weighting method combined with TOPSIS. The inclusivity pillar explicitly incorporates education-related indicators, such as school infrastructure, female literacy, access to Water, Sanitation, and Hygiene (WASH) facilities, and facilities for students with disabilities. The resilience pillar, on the other hand, includes labour market participation and economic capacity.

Results reveal stark intercity differences: Chennai leads in safety and resilience, Pune and Hyderabad show balanced urban performance, whereas Delhi NCR and Kolkata lag significantly across multiple indicators. To connect these macro patterns with labour-market realities, the study integrates a micro-level logistic regression model based on primary data from 611 slum households across six million-plus cities. The model estimates the probability of households falling into the lower-expenditure (and hence economically vulnerable) category, using housing conditions, drainage access, ventilation, land tenure, and structural quality as predictors.

Findings demonstrate that inadequate living conditions substantially heighten economic vulnerability, which in turn restricts the ability of slum residents, many of whom engage in informal, low-paid work, to access stable employment, invest in skills, or support children's

educational attainment. Poor ventilation, a lack of drainage, and insecure tenure are particularly strong predictors of low household expenditure capacity, revealing how deficits in the built environment translate into labour market disadvantages.

How does Informality Accentuate Climate Change Effects? The Case of Urban Heat and Informal Workers in a South Indian City

Vinoj Abraham Professor, Centre for Development Studies, Thiruvananthapuram, Kerala

This study examines climate change induced urban heat stress in Thiruvananthapuram, Kerala, through a thermal justice perspective, analysing the labour market features and living conditions of informal workers and interstate migrants. Rising temperatures associated with climate change, combined with rapid urbanisation, vertical expansion, and land-use change, have intensified urban heat island effects in this coastal city. High humidity further amplifies thermal stress, such that even modest increases in temperature become unbearable. This study argues that heat exposure, vulnerability, and adaptive capacity are socially and economically differentiated and shaped by labour relations and power structures. Drawing on primary survey data from around 600 informal workers across sectors such as construction, street vending, sanitation, transport, and delivery services, the study analyses patterns of heat stress at workplaces and residences. Especially, the interstate migrant workers vulnerabilities are compounded by insecure employment, poor housing, restricted access to cooling technologies, and limited social networks. Inherent social and institutional mechanisms of labour control such as informality, contractor-mediated employment, tied housing, long working hours, and fear of job loss further constrain migrants' ability to avoid heat exposure or demand protective measures. These dynamics intensify thermal injustice, as workers who sustain urban growth disproportionately bear the climatic costs of development. The study underscores the need for climate adaptation and urban planning frameworks that explicitly address informality, migration, and labour control, advancing worker-centred and socially just responses to urban heat in the context of climate change.

Unequal Effect of Exposure to Digital Technologies on Intra-factory Wages and Employment

Seema Sangita Associate Professor, Jawaharlal Nehru University, New Delhi

Advancement of technology is known to cause polarisation of jobs as some groups of workers may benefit from the new technology while other groups lose out. As a result, there is a possibility of increasing inequalities in the world. This study aims at demonstrating that greater exposure to emerging digital technologies can lead to higher polarisation of wages

and employment between managers and workers within a workplace. The effect of factory level exposure to emerging digital technologies on the wage and employment gaps between managers and workers in the Indian formal manufacturing sector is analysed. A nascent and unique dataset that measured exposure to a range of emerging digital technologies of the last decade is used for this analysis. This data is available at a highly disaggregated level and is mapped to the National Industrial Classification (NIC) 2008 5-digit codes. This is combined with a recent round of Annual Survey of Industries (ASI) to obtain factory level information about the wage and employment gaps of managers and workers, as well as a range of control variables.

Employing a combination of Ordinary Least Squares (OLS) and multi-level hierarchical models, it is found that factories with relatively higher exposure to digital technologies are likely have a relatively higher wage and employment ratios of managers versus workers, indicating an unequal effect among these groups. The firms that export some share of the final output, experience an exacerbated effect of exposure to technology on intra-factory wage and employment inequality. However, factories that participate in importing inputs and foreign investment appear to increase relative employment of workers vis-à-vis managers as their exposure to technology increases. The data structure is a hierarchical one, with factories nested within sectors, albeit highly disaggregated sectors at NIC 5-digt level. There are likely to be substantial differences between the firms in each sector and also different firms in each sector may respond differently to exposure to technology. Therefore, we analyse our models with both random intercept as well and random intercept and random slope methods.

The results, in general, remain robust against the use of these methods. The LR tests indicate that the hierarchical models perform better than the OLS models. AIC calculations indicate that the impact of exposure to digital technologies on wage gaps between managers and workers are best depicted by the random intercept model. In contrast, similar effect on employment gaps between managers and workers are best shown by the random intercept and random slope model.

The Political Economy of India's New Labour Codes

Sheba Tejani Senior Lecturer, King's College, London, England

The Indian government recently overhauled the entire framework of 29 national labour laws and replaced them 4 new laws collectively known as the Labour Code. If labour protections were already weak in practice, if not always in the letter, and if most of India's labour force remains in the informal sector and out of the ambit of labour law, why are the new labour codes significant? What are they intended to achieve and through what mechanisms are they working?

This paper explores these questions by intersecting the Indian political economy and law and political economy literatures. Drawing on Polanyi and Somers, it argues that the codes are a form of "legal pre-distribution" that re-engineer market rules and structures to produce (and reproduce) specific patterns of resource distribution. This legal pre-distribution occurs through a process of juridification and/or (de)juridification: the process of expanding or withdrawing specific rights or entitlements from the coverage of formal laws. The (de) juridification of labour law in India has a long history rooted in neoliberal ideas of deregulation and market competition that were first articulated by the Second Labour Commission in 1999, and enacted most fully through these labour reforms.

Using document analysis as our research method and interviews with representatives of central unions and prominent labour lawyers to gain perspectives from the labour movement, we show that the labour codes work through the mechanisms of exclusion, restriction, discretion, bureaucratisation and disciplining, to re-regulate the economy and society to channel gains to capital and make labour more compliant. For example, the codes institutionalise precarity by regularising the use of contract of labour in core activities of enterprises and raise the thresholds for worker coverage. This is especially concerning in light of technological change that is limiting employment generation and reducing the employment intensity of output and implies that even more workers in the organised and unorganised sectors will be out of the ambit of labour laws. We argue that the codes represent the government's strategy to reduce labour and compliance costs, and attract investments exiting from China at the expense of workers' rights.

Innovation and IPR: From Ideas to Job

Preeti Puja PhD Scholar, Department of HSS, Indian Institute of Technology, Patna, Bihar

Nalin Bharti Professor and DPIIT IPR Chair at Department of HSS, Indian Institute of Technology, Patna

India followed an inward-looking approach that resulted in a stagnant "Hindu rate of growth" of 3% to 3.5% annually. India's simple average tariff rate was an astronomical 128 percent in 1991, severely limiting international trade. The 'License Raj' was dismantled by abolishing industrial licensing for most sectors and deregulating interest rates. Prior to 1991, India had one of the most restricted regimes in the world with extensive government control and licensing for businesses. A significant milestone was the Patents Act of 1970, which helped India's generic pharmaceutical industry grow and ensured affordable medicines were available. Economic liberalization gained momentum in 1991.The state's role was reduced through the disinvestment of Public Sector Undertakings (PSUs) and opening up key sectors like telecom and civil aviation to private companies. India's entry into the WTO in 1995 has aligned the country with the TRIPS Agreement, marking a definite shift toward promoting innovation

and international integration. India was integrated into the global economy through the devaluation of the rupee, significant tariff reductions, and the liberalization of Foreign Direct Investment (FDI). The restrictive FERA was also replaced by the more liberal FEMA, marking a complete transformation of India's economic approach. The 1991 economic reforms opened India to the global economy, and with the WTO TRIPS Agreement in 1995, India took many major steps to amended its old IPR acts. Amendments to the Patents Act (1999, 2002, 2005) reintroduced product patents in pharma, biotech, and chemicals. The Copyright Act was expanded (1994, 2012) to include digital works and performers' rights. The Trade Marks Act, 1999 and Designs Act, 2000 made India's system globally compliant. National IPR Policy & Modernization (2016 present) envisioned "Creative India, Innovative India." As an outcome of these policy and act reforms Over 92168 patents filed, the highest ever recorded in India's history in 2023.4.76L Trademark Applications filed which reflect a Significant growth in brand registrations across various sectors.30K+Design Applications filed resenting Industrial design registrations showing creative innovation and 160 new GI registrations in 2023 shows Geographical Indications protecting India's cultural Heritage. After independence, India's political focus was on self-reliance and access to affordable goods, leading to weaker patents and a stronger generic industry. The Patents Act of 1970 reflected this by prioritizing public health. Section 3(d) of the Patents Act was a landmark provision that restricted "evergreening" of drug patents to ensure affordable medicines. IPR has been central to India's bilateral and multilateral negotiations. During the COVID-19 pandemic, India advocated for a TRIPS waiver on vaccines, framing IPR as a matter of global equity. The growth in patent, trademark, and design filings in 2022-23 demonstrates a rise in innovation and brand creation. A stronger IPR regime has attracted FDI in R&D-intensive sectors and simplified technology transfer. The TKDL has documented over 400,000 traditional formulations and challenged more than 200 wrongful patents abroad. Biotechnology, IT, pharmaceuticals are some of the sectors where India has proved major innovations. These sectors are also offering new jobs (platform workers), software developers, jobs in pharma industries etc. Start-ups has created new job which was not available in India. Since 1947, India's IPR framework has evolved from a welfare-driven system to a balanced, innovation-oriented one. The Patents Act of 1970 created a strong generic pharma industry, while post-1991 reforms led to stronger IP laws with public health safeguards. India's ranking of 40th in the Global Innovation Index (2023) demonstrates its rise as a hub for FDI and start-ups while maintaining focus on equity and access.

Effects of Labour and Product Market Regulations on Contract Workers and Industrial Accidents in India: Are they Substitutes, Complements, or Redundant?

Rahul Suresh Sapkal Assistant Professor, Indian Institute of Technology, Bombay, Mumbai, Maharashtra

Daksha C. Parmar Associate Professor, School of Public Health Dr. D Y Patil Deemed University Navi Mumbai, Mumbai, Maharashtra

Kinchan Chakma Doctoral Candidate, Ashank Desai Centre for Policy Studies, Indian Institute of Technology, Bombay, Mumbai, Maharashtra

Rigidity in labour and product markets is often seen as a hindrance to economic performance, leading to uncertainty about which market to reform first and how such reforms will affect the other. Should the government implement simultaneous reforms or take a gradual approach, assuming markets will self-correct? Unfortunately, there is no straightforward answer to this question. To address this, we examined the impact of labour and product market regulations on the rise of contract workers and industrial accidents in India's manufacturing sector from 1998 to 2022. Using Time Series Cross-Section datasets and the Fixed Variable Decomposition Method, we found that high labour market regulations (LMR) combined with low product market regulations (PMR) lead to a decline in the intensity of contract workers. On the other hand, improving LMR while keeping PMR high is likely to reduce the incidence of industrial accidents. This paper suggests that to decrease contract work intensity, the government should maintain strong labour regulations while restricting firms' flexible entry and exit. In addition, to reduce industrial accidents, it should strengthen inspection enforcement mechanisms. This combined approach is expected to create quality jobs and enhance workplace safety.

TECHNICAL SESSION 1.3

Artificial Intelligence and Future of Work

Dev Nathan Professor, Institute for Human Development, New Delhi

There are two effects of artificial intelligence (AI) on labour that we need to consider: on employment and on income. In both cases we have to deal with both medium-term and long-term effects, and with effects in both low-middle income countries (LMICs) and high-income countries (HICs). In case of employment, AI has effects of both replacement and augmentation; though augmentation also leads to replacement, as those whose capabilities are augmented then use fewer or none of workers who carry out routine tasks, for example AI can augment the search capabilities of researchers and thus replace the research assistants who used to perform this function.

Artificial intelligence can impact employment through two routes: first, the direct takeover of tasks formerly carried out by workers, for example routine mental tasks; and secondly, through automation working in combination with robots and other automatic systems. There are many areas in which AI has taken over tasks performed by humans – for example in medical service, where much diagnosis can be taken over by AI systems (being carried out in a number of hospitals in the country); educational services, where grading etc., can be taken over and there can be personalised lectures and tutorial sessions (as done by BYJU); investment strategies and banking functions (as in credit decisions) can be carried out by AI algorithms. These are areas where AI replaces middle-level workers who carried out what have become routine mental tasks.

There are also areas where AI, in combination with robots and automatic systems can result in automation – resulting in dark factories, where human supervisors only have tasks of setting and checking on automated systems (Tesla's fully automated battery plants, Alibaba's clothing factory in Hangzhou, etc.); dark warehouses (Amazon and Alibaba). While there are both dark factories and warehouses, there are current limits to their spread. One is that these dark workplaces are very expensive – a robotic weaving system costs from $100,00 to $500,000. This should be compared with the current labour costs in India or Bangladesh. Whole automated factories and warehouses cost $100 to $500 million. In addition, there are limits to what current automation can do. For example, in garment/shoe manufacture – where stitching of malleable fabrics and complex patterns cannot be carried out by robots. Adidas

closed down its automated factory to produce athletic shoes. It only carried out automated production of shoes without stitching. Similarly, woven clothes, such as Uniqlo's 3-D woven shorts; or, where there are many styles, it is expensive for automated systems to be re-programmed. But automated systems will reduce the push of offshoring to low-cost labour destinations – reduction in employment in the Global South. Thus, there will some reduction in employment of medium-skilled labour performing routine tasks, both mental and manual. On the other hand, there will be an increase in demand for labour at both low-skilled and high-skilled ends; the former for personal manual tasks, for example medical and personal care. But, this could also be robotised.

The change in employment patters and volumes will mean a decline in associational power of workers. What about production power? The power of disruption would be much greater. Benefits of AI go to capital. Thus, an increase in inequality with the working of the power law distribution where some get a lot and many get little. This power law distribution, however, leads to a problem of effective demand – workers won't have the income to buy all that is produced. This could operate on a global level. What this means is that there is a link between employment and income problems – low employment of labour will lead to low income for workers and thus a problem of effective demand.

How to deal with both of these problems? On the one hand, there could be an increase in employment in non-production sectors – such as culture, community services, and healthcare, including elder care. Unpaid care work, could be turned into paid care work. This new areas of employment could be funded not only by payment by the consumers, but also by taxes on automated production systems, for example the robot tax proposed in California. This would to some extent redistribute income from capital to labour. Along with this, there could also be universal basic income (UBI) – to be paid out of taxes on capital's income, or as a re-distribution of profits. Sovereign wealth funds are a step in that direction. Both Alaska and Norway have sovereign wealth funds created out of oil revenues and invested in enterprises as mutual funds. The income from the mutual funds is paid out as UBI.

Can this be taken to the extreme, where all the capital of enterprises is owned by citizens, or of each enterprise by its workers? This would introduce the problem of the soft-budget constraint, identified as a negative influence on innovation since there would be a tendency to continue loss-making enterprises. Is there an alternative to the discipline of the market? Researchers propose a political decision. But this would allow for a centralisation of economic enterprises. It might be better to allow differential profit rates and even bankruptcy of enterprises. With UBI available, there would be income protection of workers. A decentralised, market-based system can provide incentives to promote knowledge creation and innovation – decentralised investment decision-making, with profit rates depending on market performance, can promote innovation. However, a system of decentralised enterprises with differential profit rates can, on their own, lead to the creation of mega enterprises. To halt the development of billionaires, there needs to taxes on high profits. Along with this, there can be a system of compulsory licensing systems to deter "winner-

takes-all" intellectual monopolies. Innovators will be able to secure first-mover advantage but not establish intellectual monopolies.

Productivity Effects of Employment Shifts: Measuring Within-and Between-Sector Contributions in India

Hansa Jain Professor, Mahatma Gandhi Kashi Vidyapith, Varanasi, Uttar Pradesh

This paper examines the productivity effects of employment shifts in India, focusing on within-sector and between-sector contributions to aggregate productivity growth. Productivity, a central driver of long-term growth and living standards, depends on technological improvements, skill upgrading, and organisational efficiencies within sectors, as well as labour reallocation across sectors. The study analyses these dynamics since the 2000s in the context of economic reforms and structural change. The analysis draws on secondary data, examining employment shares and value added across sectors. Comparisons are made for two sub-periods, pre-2011–12 and post-2011–12, due to technological advances and policy shifts after 2011. A shift–share decomposition framework is applied to estimate within- and between-sector contributions at national and state levels, supplemented by pooled regression analysis.

Employment patterns between 2000 and 2023 show gradual but incomplete transformation. Agriculture's employment share declined from nearly 60% in 2000 to 41% in 2019, though the COVID-19 pandemic temporarily reversed this trend due to reverse migration. Industry absorbed only a modest share of workers, plateauing after 2017, while services became the primary absorber, rising to 34% in 2019. However, services are dualistic: high-productivity activities such as IT and finance coexist with low-productivity informal services. Agriculture still employs over two-fifths of the workforce but contributes less than one-fifth of value added. Value-added trends highlight uneven structural change. Agriculture's share contracted steadily, industry fluctuated without sustained momentum, and services expanded continuously, consolidating their dominance in GDP. Productivity disparities widened: agriculture, despite tripling its productivity, remains the least productive sector, while services consistently outperform both agriculture and industry. Aggregate productivity growth has been service-driven, but weak labour absorption raises inclusivity concerns. Shift–share decomposition shows divergent trajectories across periods. Agriculture recorded persistent negative between-sector effects, reflecting shifts into low-productivity non-farm activities, with limited within-sector gains. Manufacturing initially contributed positively through modernisation and global integration but later displayed negative within-sector effects due to capital intensity and informality. Construction, once a major absorber during the infrastructure boom, registered declining between-sector contributions after 2011–12, with gains restricted to efficiency improvements. Services consistently generated within-sector productivity growth, particularly in technology-enabled sub-sectors, though benefits were diluted by expansion of informal employment. At the aggregate level, pre-2011–12 growth was driven by strong

within-sector improvements but weakened by negative reallocation effects. Post-2011–12, both within- and between-sector contributions declined, leading to slower productivity growth. This reflects growing reliance on capital-intensive activities, limited labour absorption, and persistent structural dualism. State-level analysis reveals heterogeneity. Some states recorded modest agricultural and service gains, while others faced negative contributions across sectors.

Regression results show female labour participation enhances agricultural productivity, urbanisation supports manufacturing and services, and technology strongly drives service-sector growth but less so in agriculture and construction. The study concludes that India's transformation remains incomplete and service-led. Weak manufacturing and persistent informality constrain productivity and inclusivity. Policy priorities include revitalising labour-intensive manufacturing through global value chain integration and SME support; reducing informality via social protection and enterprise formalisation; and strengthening human capital through vocational training, digital literacy, and sector-specific skills. Balanced strategies combining efficiency gains with productive labour reallocation are essential for sustainable, inclusive, and employment-intensive growth.

Impact of Technology on Employment and the Low-Wage Problem: A Comparative Study of Rural and Urban Varanasi

Anup Kumar Mishra Professor, DAV PG College, Banaras Hindu University, Varanasi, UP

The impact of technology on employment in India has emerged as a critical subject of economic and social inquiry, particularly in the context of its rapidly growing digital economy. India has witnessed exponential growth in internet connectivity, mobile penetration, and digital platforms over the past decade, driven by initiatives such as Digital India, Skill India, and Start-up India. According to the Ministry of Electronics and Information Technology, over 800 million Indians now have access to the Internet, and more than 500 million own smartphones. This digital wave has reshaped employment structures, particularly in urban centres, by creating new job roles in gig work, e-commerce, and fintech services. However, this technological transformation has had asymmetrical effects. While technology has led to new income opportunities in app-based services, online retail, and digital micro-enterprises, it has also intensified job polarisation—where high-skilled and low-skilled jobs grow, but mid-level traditional jobs shrink. Furthermore, many segments of the population—especially in rural areas, informal sectors, and low-income households—remain excluded due to lack of digital skills, affordability issues, and limited infrastructure. In addition, India faces a persistent low-wage problem, especially among informal workers who comprise over 85% of the total workforce. The convergence of informal employment and digital exclusion has deepened income inequality, particularly between urban and rural populations, and across gender, caste, and class lines.

Employment, wages, and technology in Uttar Pradesh Uttar Pradesh (UP), India's most populous state, presents a unique lens for examining the interplay between technology,

employment, and wage disparity. Despite hosting several industrial hubs, UP continues to have one of the lowest per capita incomes among Indian states and one of the highest proportions of informal labour. In recent years, UP has made significant efforts to bridge the digital divide through the establishment of Common Service Centres (CSCs), One District One Product (ODOP) schemes integrating digital marketing, and expansion of Pradhan Mantri Kaushal Vikas Yojana (PMKVY) skill centres. However, digital penetration and technological literacy remain uneven—particularly in rural districts where internet access is patchy and education levels are low. Rural employment is still dominated by manual labour, agriculture, and informal self-employment, often with meagre earnings and seasonal vulnerability. The UP Human Development Report (2023) notes that despite increasing smartphone ownership, only a fraction of rural youth use digital tools for economic purposes. This highlights a growing concern: digital availability does not automatically translate into digital employability or better wages unless complemented by training, connectivity, and support systems.

This study examines the role of technology in shaping employment patterns and wage structures in Varanasi district, India, comparing rural and urban contexts. Using a mixed-method approach combining household surveys, in-depth interviews, and secondary data, we explore the adoption of digital tools, the persistence of low wages, and the rise of gig/platform work among youth. Findings reveal a pronounced digital divide between rural and urban areas, significant skill mismatches, and limited wage improvements despite increased technological penetration. The gig economy provides flexible income opportunities for youth but often lacks social protection and sustainable earnings.

Policy recommendations include targeted digital skills training, infrastructure development, and regulatory measures to improve wage security and equitable access to technology-enabled employment. Varanasi's experience demonstrates that technology is an important enabler but not a standalone solution to low wages or employment precarity. While the gig economy offers urban youth flexible work, the absence of wage security and benefits limits its transformative potential. Bridging rural–urban digital gaps and ensuring fair wages in platform work are essential for inclusive technological progress.

Platform Capitalism and Formal-Hybrid Subsumption Continuum: Reconfiguring Labour-Capital Relations in Food Delivery Platforms in India

Nandani Kumari PhD Scholar, Jawaharlal Nehru University, New Delhi
Deepak Kumar Mishra Professor, Jawaharlal Nehru University, New Delhi

This article offers a re-theorisation of the emergent phenomena of food delivery platforms from the experiences in the Global South based on the combining concepts of 'platform capitalism' and Marx's idea of the 'critical concept of technology'. Thereby, capitalism does

not work to develop technology, in general; instead, it develops only those kinds of machines that abet its economic, social, and political interests. It also utilises the different forms of subsumption defined by Marx to analyse the social relations in the platform economy in India. Existing research primarily provides two different explanations of the labour processes over platforms. On one hand, some conceptualise platform work as a 'new form of work' emphasising technology as the major driving force connoting "technological exceptionalism" or "digital distinctiveness", while others question the newness of platform work centring capital as the main driver in the analysis of social relation of platform work while demoting the role of technology. Joyce (2020), for instance, challenges the idea of platform work as a 'novel configuration of work'. Citing instances of 'putting-out system' and 'internal subcontracting' of factory production, he argued that triangular employment relationships were common in the early history of capitalism and, therefore, not unique to platform work and offers a significant solution by arguing that Marxist ideas of subsumption and the cash nexus should be used to theorise the social relations of platform-mediated gig work. He draws attention to parallels between platform work and Marx's conceptualisation of formal subsumption.

So, in modification to Joyce's idea, we also highlight the importance of technological intervention as a unique step to discover new ways of exploitation and capital accumulation in platform economy and argue that the dynamics of work relations of food delivery platforms are best understood as a 'co-evolving interplay between technology, society, and market' in India where the social-relations of food delivery platforms can be analysed through 'modifying capital-labour relations' by the involvement of technology in the digital age defining food delivery platforms as a 'capitalist instrument of profit appropriation' in India's neoliberal economy and fostering platform capitalism in India. Further, borrowing the idea of coexistence of different subsumption simultaneously in a work system under capitalism in developing countries, we argue that the labour processes in food delivery work systems in India are located mainly in the 'formal-hybrid forms of subsumption continuum' under capitalism. In other words, we argue that the labour processes in food delivery platforms in developing countries such as India may have some characteristics of formal and hybrid subsumption, which has persisted throughout the history of capitalism, and currently we see it also in the platform economy, specifically in food delivery platforms in the digital age.

Assisted by selected instances from prior studies and field experiences in Delhi, the article highlights that the interplay of technology, state, and market has modified the social relations of food delivery work, where both direct and indirect forms of subsumption, that is formal and hybrid subsumption, are present in the platform economy, creating a formal-hybrid subsumption continuum. As a result, fostering platform capitalism in India. Such technological mediation of work has been used for profit generation by the platform. This results in high labour intensification and exploitation for workers, such as unstable income, insecurity, a lack of workplace, and so on.

Farm Mechanisation and Labour Dynamics: Testing Induced Innovation in Indian Agriculture

Sneha S B Research Consultant, International Water Management Institute (IWMI), Anand, Gujarat

The rural economy has witnessed several modifications as a result of rising real wage rates, increased rural-urban migration, labour shortage in agriculture, rising ratio of non-farm to farm incomes, and a wider adoption of farm mechanisation. In response to rising wage rates, there is increased farm mechanisation and a shift in the cropping pattern from labour-intensive to labour-saving crops. The increase in labour wages causes a relative change in the prices of the other production inputs, which prompts farmers to adopt novel technologies and replace relatively more expensive inputs with the less expensive ones. Indian agriculture has witnessed a significant change in input use, moving away from traditional inputs towards modern inputs like advanced machineries, and it was observed that average labour use in crop cultivation has witnessed a decline. The hypothesis of "induced innovation" refers to this phenomenon and identifies input prices as inducing factors for technological development. In this context, it becomes essential to analyse the evaluation of effect of factor substitution on crop cultivation cost for devising suitable strategies for controlling the cost inflation in the country.

This study had tested induced innovation theory by examining whether and to what degree rising wages are pushing farmers to replace labour-intensive farm operations with machinery. It also analysed the implications of labour wages on cost of cultivation along with labour-machinery substitution on farm economy by estimating the price elasticity of demand for labour and elasticity of substitution between labour and machinery by using the trans log cost function. The estimated Price elasticity of labour is -0.21, which indicates the labour demand is inelastic in nature and there is an inverse relation between wages and labour demand. While the estimated elasticity of substitution between labour and machinery is 0.72, which implies that labour and machine are inelastic substitutes to each other.

Do Employment Protection Laws and Labour Turnover Affect Robot Adoptions? Evidence from India

Rahul Suresh Sapkal Assistant Professor, Indian Institute of Technology, Bombay, Mumbai, Maharashtra
Kinchan Chakma Doctoral Candidate, Ashank Desai Centre for Policy Studies, Indian Institute of Technology, Bombay, Mumbai, Maharashtra
Areesha Khan Independent Researcher, Alumni, Indian Institute of Technology, Mumbai, Maharashtra

Over the past decade, India has experienced significant growth in the import and installation of industrial robots, with an annual growth rate of 14.54%. This achievement has propelled India to the 7th place globally in the export-driven sectors, enhancing its ability to compete on

the international stage. The technological transformation brought by industrial robots has a discernible impact on work and labour markets. Conversely, local labour market institutions and dynamics have also shaped the technological embeddedness of these robots in their industrial application. Although among policy makers, industrialists, and academics, the concerns about the long-term impact of technological unemployment and labour displacement are widely debated and discussed. Despite significant research on labour markets, emerging economies receive little attention, especially those with stringent labour regulations and high levels of monopolistic competition in the manufacturing sector.

In this paper, we examine the effects of employment protection laws (EPL) on industrial robot adoption and how this relationship is moderated by local labour market dynamics such as labour turnover at the industry level for the period between 2013-2023 in India. Our study connects with two strands of existing literature. The first strand examines the role of labour market institutions such as collective bargaining, union density, and the employment-at-will doctrine that has negative consequences for task assignment (from core to non-core) and the type of workers. In the context of developing countries, the automation of production processes has significantly harmed labour rights, undermined legal protections, and pushed workers into precarious situations. This shift has led to an increase in labour lawsuits, contributed to industrial deadlock, and hindered economic growth. In addition, it has weakened collective bargaining, limiting workers' ability to negotiate effectively. Therefore, when procedural laws allow for flexibility and enable the substitution of workers with machines, labour and robots can coexist, provided that the costs of adjustment do not exceed the costs of adopting robots.

The second strand of the literature examines the opportunistic behaviour of both workers and employers. Research suggests that high levels of employment protection, which increase firms' exposure to employees' holdup risks, can influence future investments in robot adoption. Due to uncertainties about the future, employers cannot secure their quasi-rents against claims from workers ahead of time. As a result, workers may renegotiate wages, often requesting lower future wages to offset present reallocations or layoffs and to mitigate potential holdup risks faced by employers. Therefore, in an environment with strict employment protection and a high risk of holdup, the demand for robot adoption tends to rise in capital-intensive sectors. Our analysis reveals that, regardless of employment protection levels, Indian firms tend to adopt industrial robots primarily for non-core and repetitive tasks to enhance their competitiveness in the global market.

Do Gender Biases Exist in Green Job Creation? Evidence from India

Sabyasachi Tripathi Associate Professor, Symbiosis International University, Pune, Maharashtra

Sudipa Majumdar Professor, Integrated Research and Action for Development (IRADe), New Delhi

Gender discrimination in the workplace and the adverse effects of climate change disproportionately affect women. India has made significant strides in adopting a clean energy transition as part of their climate change mitigation strategies, where solar energy is crucial. The PM Surya Ghar programme started in March 2024 aims at installing solar rooftops in 10 million homes by March 2027, along with the requisite capacity building initiatives for solar rooftop technicians through the Suryamitra and other training programmes. However, India's green energy programmes exhibit notable gender disparities. There has been low female participation and job placements in the solar sector, owing to patriarchal barriers, cultural norms, and safety concerns.

This study examines state-wise biases in female participation using Multinomial Logistic Regression on 34,579 trainee data from the Suryamitra portal, connecting them to domestic violence (cruelty cases under Section 498A) and gender inequality (Sustainable Development Goal [SDG} 5 scores). Results show that women are likely to be unemployed or uninterested in jobs due to barriers within the households and communities. In order to encourage inclusivity, policy recommendations include female-only training batches that would be sensitive to female-centric obstacles, awareness campaigns, mentorship programmes, and initiatives to reduce household crimes against women to improve their overall gender inequalities. Specifically, it attempts to answer the questions – a) Are there state-wise biases in female participation in the rooftop solar skilling programmes? b) To what extent are these biases influenced by the prevailing gender inequality (SDG 5 scores) and/or household crimes against women (cruelty cases under Section 498A)? c) Do gender, social category, training batch, and training centre quality affect the placement outcomes of the trainees of the solar skilling initiatives by the Government?

Results reveal that female solar trainees are more likely to be unemployed. Training batches, training centres, and gender equality have significant placement outcomes. Cruelty against women by the husband and in-laws reduces interest in jobs or further studies. Our results have important and relevant policy recommendations pointing towards supporting women in technical jobs by improving gender equalities, standardising training centres and curricula, and reducing cases of cruelty against women.

TECHNICAL SESSION 1.4

Technological Advancements, Innovations and its Impact on Labour Markets: Empirical Insights

Nausheen Nizami Associate Professor, Pandit Deendayal Energy University, Gandhinagar, Gujarat, The Head, Department of Economics

Technological advancement—particularly in artificial intelligence (AI), robotics, and digital platforms—is fundamentally reshaping employment by altering the nature of tasks, the demand for skills, and the structure of labour markets. The International Labour Organization (ILO) finds that occupational exposure to generative AI varies markedly across countries and sectors, with substantial potential transformation of jobs rather than straightforward displacement. The World Bank's empirical work emphasises that while technology can expand employment via productivity and growth effects, it more often reduces employment in the short run: for example, a 10% technology-driven productivity improvement is estimated to reduce employment by 2% in advanced economies and 1% in emerging economies in the first year. The World Economic Forum (WEF) finds that broadening digital access will be the most transformative trend through 2030, with 86% of employers citing AI and information processing as key drivers of workforce change. Building on foundational insights from Nobel laureate David Card—whose natural-experiment research underpins modern labour-economics policy design—and laureate Claudia Goldin—who elucidated how structural change, institutions, and technology interact with gendered labour market outcomes—this paper argues that policy must go beyond protecting existing jobs to actively shaping the transition. Key policy imperatives include: (a) investing in lifelong learning and portable social protection to equip workers for transitions; (b) strengthening active labour-market programmes, social dialogue, and wage-sharing mechanisms to ensure productivity gains are equitably distributed; and (c) developing governance frameworks for AI and platform work that safeguard job quality, equality, and workers' rights. By synthesising these institutional, empirical and policy perspectives, the paper offers actionable recommendations for governments, employers, and labour organisations to navigate the technology-employment nexus and promote inclusive, resilient labour markets.

Technological advancements and long-term viability have become integral characteristics of contemporary economic growth, especially evident in the developing economies of the

BRICS cluster, inclusive of Brazil, Russia, India, China, and South Africa. These group of countries, although exhibit distinct developmental trajectories, they share an analogous endeavour towards achieving technological upgradation and ensuring productivity augmentation, given the swiftly transforming global landscape. Empirical evidences have been collected to analyse the interrelationship between technological upgradation, green innovation, and productivity performance in BRICS economies during the time period of 2010-2020, sourcing data from World Bank. In particular, the study aims to investigate how imports of environmentally sound technologies, expansion of medium and high-tech manufacturing, annual working hours per output and manufacturing output per worker influence total factor productivity (TFP).

The quantitative analysis adopts a panel econometric framework to investigate the underlying factors of TFP across BRICS countries from the year 2010 to 2020. This research elaborates on the theoretical foundations of endogenous growth and technology diffusion models. It asserts that productivity growth in developing economies is not merely determined by factors like labour input and capital accumulation, but by their ability to adapt and harmonise upgraded and environmentally sustainable technologies. One of the factor 'imports of environmentally sound technologies' is notably imperative in this respect, for it serves as a medium for global spill overs and sustainable production methods. In contrast, heavy reliance on conventional labour-intensive production methods coupled with elongated working hours can lead to decreased returns to productivity. Hence, in order to understand the evolving nature of BRICS economies, it is crucial to analyse how technology and labour dynamics interact with one another. The anticipated relationships are conceptually grounded. An increased share of medium and high-tech manufacturing value added is expected to increase the TFP, for it enables automation, upgrades production processes, and synthesises AI-driven technologies. Likewise, increased imports of environmentally sound technologies are likely to augment productivity levels by introducing efficient production methods. The impact of manufacturing output per worker should also be in a positive direction for it directly exhibits efficiency in the labour. Interestingly, the relationship between working hours and TFP might be non-linear for they could also decrease efficiency levels if not coupled with skill enhancement. Initial analysis depicts that BRICS countries have endured major structural transformations over the last decade. For instance, China and India have displayed considerable growth in medium and high-tech manufacturing coupled with increasing imports of green technologies. On the other hand, Brazil and South Africa have depicted moderate progress and Russia's performance shows a blend of increased industrial capabilities but disparate technological adaption. These divergences extend precious backgrounds for further understanding cross-country variations in the TFP and technology association, and for helping us investigate if green innovation acts as a stimulus for sustainable economic growth.

Productivity Dichotomy in the Indian Manufacturing Sector: An Empirical Assessment

Balakrushna Padhi Assistant Professor, Birla Institute of Technology and Science, Pilani, Rajasthan

Himja Sharma PhD Scholar, Birla Institute of Technology and Science, Pilani, Rajasthan

The Indian manufacturing sector is regarded as an engine of economic transition, but it suffers a debilitating dichotomy in productivity that continues to widen. This binary, characterised by a structural dualism between a small but active organised sector and a vast but stagnant unorganized sector, is one of India's development puzzles that has continued to draw attention.

This study examines the persistence and evolution of productivity dualism in the manufacturing sector of India over the period 2010-11 to 2022-23, systematically comparing the formal and informal aspects. Using unit-level data from the Annual Survey of Industries (ASI), the National Sample Survey (NSS), and the Annual Durvey of Unincorporated Sector Enterprises (ASUSE) datasets, the study breaks down the structure and dynamics of labour and capital productivity by industry, state, and factor intensities. Using the Blinder-Oaxaca decomposition, the results indicate that both sectors have experienced an overall rightward shift in productivity levels. The gap in labour productivity between the formal and informal sectors is substantial and largely attributable to differences in resource endowments, including capital intensity, skill composition, and access to institutions. On the other hand, in the case of capital productivity across regions, there is pronounced convergence and subsequent inversion, and informal firms are characterised by adaptive efficiency in the constraint of resource use. At the spatial level, formal-sector labour productivity varies considerably across states, whereas, conditional on this, capital productivity exhibits convergence, particularly in areas with a higher degree of industrial concentrations. The results of Total Factor Productivity (TFP) indicate the dominance of the formal sector in terms of efficiency gains. However, the informal sector has shown resilience and a catch-up in select industries, albeit slowly, since the 2015-16 period. These findings highlight the persistence of structural and regional asymmetry in India's manufacturing transformation, as formal and informal firms play a dual role in driving growth, job creation, and the production processes.

Direct Benefit Transfer and Adoption of Agricultural Innovations: Impact of Pradhan Mantri Kisan Samman Nidhi Scheme

Niti Mehta Professor, Sardar Patel Institute of Economic and Social Research, Ahmedabad, Gujarat

Pradhan Mantri Kisan Samman Nidhi scheme (henceforth PM Kisan) is a central government funded direct benefit transfer (DBT) scheme aiming to augment incomes of farm families by supplementing the financial requirement of landholders in procuring inputs to ensure better farm practices and yields. The proposed paper highlights how cash transfers can function in a

complementary fashion for ameliorating distress conditions in agrarian society by energising investments in modern technology and other production related aspects. Efficacy of PM-KISAN is assessed in ameliorating the credit constraints of farmers belonging to small and marginal categories enabling technology adoption based on a primary survey of beneficiaries in the state of Gujarat.

The study begins with the presumption that farmers who were better informed on investments related to productive activities through their interactions with the Krishi Vigyan Kendras (KVK) would respond differentially to the DBT. It was believed that DBT would enable increased investment in technology for the comparatively informed farmers. Attempt is made to look at the impact of this measure on farmers' behaviour towards adoption of better cultivars and crop compositions that are more efficient users of inputs.

Cash benefit disbursed under PM Kisan stimulated the agriculture sector in the study areas by reducing in a limited manner the liquidity constraints amongst producers during the time of making agricultural investments. Spending pattern of the farmers was related to their dependency on agriculture sector for livelihood, farm size, and access to formal credit services. A noticeable shift in cropping pattern towards more remunerative crops (cotton, spices, pulses) was observed after the benefit transfer. Even though it is difficult to isolate the impact of cash transfer in total household incomes, its magnification in terms of generation of multipliers through the use of better seeds in crop sector, enhanced yields due to fertiliser use, and increase in dairying income could not be ruled out. Empirical assessment revealed that PM Kisan scheme stimulated the impact of KVK by spurring adoption of modern cultivars of the principal crops cultivated.

Mapping the Gender Digital Divide in India: Issues and Opportunities

Devangana Jha Assistant Professor, Daulat Ram College, University of Delhi, New Delhi

Gautam Kumar Jha Research Associate, International Development Economics Associates Ltd (IDEAs), New Delhi

Recently the Government of India released the Comprehensive Modular Survey of the telecom sector. This has resulted in a renewed interest about the diffusion of information and communication technologies (ICTs) in India. There is an increased push for digitisation with the aim to provide various digital infrastructure as a utility to citizens. With the proliferation of ICTs in the country, there has arisen a digital divide in India, which is not limited only due to geographical factors but there are other socioeconomic and cultural factors which further accentuate this divide. In most developing countries women encounter this divide, facing disproportionately larger barriers in accessing and using digital technologies.

This paper attempts to analyse the nature and extent of digital divide in India which manifests itself across gender – the gender digital divide (GDD). We seek to undertake a

comprehensive assessment of the GDD in India, understanding its characteristics, dimensions, and socioeconomic implications. Women are important collaborators in India achieving its development goal (Viksit Bharat) and the barriers they face in availing the benefits of digitisation will hamper not only them but also the family, community and country. Hence, bridging the GDD and enabling women to improve their education and employment opportunities and outcomes is of pivotal importance for economic development.

We find that while there have been notable improvements in access of ICTs for women, usage remains low, with different economic and non-economic factors contributing to it. Rural women and women from the marginalised sections have the least access, usage and skill when it comes to deriving benefits from ICTs. The wireless revolution has helped more women to be 'connected' and enjoy some financial autonomy via use of UPI (Unified Payments Interface). However, when it comes to other skills, they fare much worse than men. Moreover, there exists paucity of official data/resources to analyse the effects of different policies and programmes that directly or indirectly affect women's participation in the digital economy. Consequently, the paper will attempt to analyse the possible effects of existing policies on the GDD and conclude offering some suggestions.

Labuor Market Impact of Artificial Intelligence in Data Science: Evidences in the Global Context

Perini Praveena Sri Assistant Professor, Institute of Chartered Financial Analysts of India University (ICFAI), Hyderabad, Telangana

Impressive developments in artificial intelligence (AI) in recent years have fuelled new worries about how technology advancements may affect the labour market. The research study through experiential measurement investigates the impact of AI on labour market that constitutes the varying patterns of job market and wage trends. Exploiting variation in automation and its risks at the global context level using exploratory data analytics and machine learning (ML) algorithms during 2020-2030 with high AI adoption, have experienced a stronger both positive and negative effect in the employment by varied education levels and job categories. Therefore, even while automation is posing problems to jobs, the workforce's evolution due to AI developments provides a compensatory pathway through the formation of new businesses and positions, underscoring the need for adaptable skill development in the labour market.

The study also discovers hints of a negative correlation between exposure to AI and increases in the average number of hours worked in low-computer-use occupations. One explanation is that AI-enabled partial automation boosts productivity both directly and by changing the job mix of occupations to include more valuable work. For people with strong digital skills, who may find it simpler to use AI efficiently and switch to non-automatable, higher-value added jobs within their occupations, this boost in labour productivity and output offsets

the direct displacement effect of automation through AI. Workers with inadequate digital skills, on the other hand, might not be able to effectively engage with AI and therefore take full advantage of all the technology's potential benefits.

The empirical results of Gradient Boosting Regression Model revealed 20 Best Features, with highest being Data Science job categories are highly correlated with varying degrees of experience, exhibiting a robust relationship with wage levels, with the best predictive accuracy R2of 87. 98 in relative comparison with other ML algorithms

Digital Transformation and Workforce Productivity: The Role of ICT in Enhancing Labour Productivity

M Rahul Assistant Professor, Institute of Economic Growth, New Delhi

Srishti Gupta Assistant Professor, Institute of Economic Growth, New Delhi

Sourashree Mukherjee Research Associate, Institute of Economic Growth, New Delhi

Shreya Nupur Assistant Professor, University of Petroleum and Energy Studies, Dehradun, Uttarakhand

Our research explores the relationship between information and communication technology (ICT) adoption and labour productivity in 6,900 manufacturing firms over a two-decade period (2000–2021), within the developing country context of India. Using robust econometric methods, we observe significant gains in labour productivity resulting from investments in ICT. In addition, we perform a disaggregated analysis, based on firm size, firm R&D intensity, and different sub-segments within the manufacturing sector, which helps identify specific segments of firms that require targeted interventions to translate technological change into productivity gains effectively. We find that large firms experience stronger productivity gains from ICT compared to smaller firms, where the benefits are less pronounced. Further, firms with medium to high R&D intensity reap greater and more sustained benefits from ICT. The results of the sub-sectoral analysis suggest that the textiles and chemicals/pharmaceuticals sectors witnessed the most substantial productivity boosts. Thus, the results suggest that ICT may be decades old, but in many regions, its full potential has yet to be realised.

Technological change often occurs at critical junctures in the economy, driving productivity and operational efficiency, enhancing the quality of goods and services, and inevitably altering the composition and skill requirements of the existing workforce. Therefore, examining the impact of technological change on the economy remains a highly relevant and timely topic. Such investigations are essential for understanding how economies adapt, how labour markets respond, and how firms can strategically leverage technology for sustainable growth. This continuing relevance underscores the importance of research into technological change and its multifaceted effects.

We focus on ICT adoption and its impact on labour, as it remains foundational despite not being a recent innovation. In India's manufacturing sector, the absorption rate of even

foundational digital tools is not uniform, and ICT is essential for enabling more advanced technologies. By evaluating the impact of ICT, we assess whether firms are adequately prepared to move up the technology ladder. We contribute to this literature by offering updated, empirical insights from a large developing economy. Our findings are intended to inform both scholarly discourse on the productivity implications of technological change and practical strategies for firms and policymakers seeking to enhance competitiveness in emerging markets.

Trade Orientation and Wage Premiums in India's Manufacturing Sector: Evidence from Blinder–Oaxaca Decomposition

Isha Gangwani Assistant Professor, University of Delhi, New Delhi

This study investigates the relationship between industry trade orientation and the wage structure in India's manufacturing sector, with a specific focus on the industry-specific wage premium. Trade liberalisation and globalisation have transformed the organisation of production, competition, and labour markets in India, and one of the important questions that arises is how these transformations shape wage outcomes across industries.

Using the Blinder–Oaxaca decomposition technique, the study decomposes inter-industry wage differentials into explained and unexplained components, allowing a more precise estimation of the wage premium associated with different types of industries, after controlling for a wide range of worker- and job-related characteristics. The empirical analysis is based on nationally representative worker-level wage data from three time periods, 2004–05, 2011–12, and 2018–19, derived from NSS EUS and PLFS surveys.

The results indicate that workers employed in import-competing industries enjoy a distinct wage premium compared to those in export-oriented and low trade-dependent industries. Importantly, this wage premium persists even after accounting for socioeconomic factors such as age, gender, education, and social group, as well as job-related factors including the organised or unorganised nature of employment. The persistence of the wage premium in import-competing industries suggests that endogenous technological changes, particularly those facilitated by increased imports of capital goods and complex machinery, are central to wage outcomes. These forms of technological upgrading are often skill-biased, favouring workers with higher levels of education and technical expertise.

Furthermore, the findings highlight the role of global competitive pressures in driving faster technological adoption in import-competing industries compared to export-oriented ones. This process fosters not only productivity and quality improvements within firms but also skill enhancement among workers. However, these dynamics carry implications for wage inequality, as the concentration of higher wages in certain industries can intensify inter-industry disparities. The study therefore underscores the dual nature of trade-related technological

change: while it raises wages and productivity in some segments, it may simultaneously deepen inequality within the manufacturing sector.

Technological Progress and Unemployment in India: Disentangling the Effects of Foreign Direct Investment Inflows and Total Factor Productivity using Autoregressive Distributed Lag Estimation

Seema Joshi Professor, Kirori Mal College, Delhi University, New Delhi

Sachin Gupta Dean Research, Vivekananda Institute of Professional Studies, New Delhi

The main objective of the paper is to identify the differential effects of technological progress—proxied by foreign direct investment (FDI) inflows—and Total Factor Productivity (TFP) on unemployment patterns in India. By using Indian data from 1992-2021 and an Autoregressive Distributed Lag (ARDL) statistical approach, two distinct patterns emerge from the data. The TFP emerges as the key driver of job creation in the long run. But the contribution of FDI to unemployment is modest yet meaningful and that too after time lags. The significant value of error correction term highlights that after temporary short-term market disruptions, employment stability is likely to be restored quite rapidly. The results of the study also reveal that unemployment is likely to persist in the short term and the benefits of FDI on employment will materialise after a three-period lag. Contrarily, the TFP gains and resultant job gains can be experienced across all time periods. But during initial phases there might be displacement effects (job destruction). The paradox underlines the complexity related to employment effects of productivity-centred growth in emerging markets like India.

The broad results of the study suggest that India's priority should be to boost TFP by way of making investments on human capital and technological innovations. Since TFP can have negative impact on employment initially, the attention must therefore be paid by the governments to establish strong unemployment insurance, reskilling initiatives, and temporary income support during transition periods. The time gap in the actualisation of FDI employment impact emphasises that bridging support strategies and sustaining policy commitment will be a must. As the country moves on growth path, FDI undeniably can play a crucial role in job creation but to secure long-term employment stability sustaining domestic productivity enhancement is very essential. Therefore, tandem anchoring of both become imminent.

TECHNICAL SESSION 1.5

Construction Worker Validation: Challenges and Innovations

Harshil Sharma Director, Indus Action, New Delhi

Umang Kamra Senior Manager, Indus Action, New Delhi

Construction workers often face precarious socioeconomic conditions, compounded by challenges related to their migrant status and informal employment, which subjects them to numerous vulnerabilities. Within this workforce, migrant and daily-wage labour chowk workers are especially vulnerable. According to Census 2001, there were about 14.6 million construction workers, accounting for 35.4% of all construction workers in India's urban areas. Most construction workers are migrants, and the informal nature of their employment subjects them to numerous vulnerabilities, such as economic exploitation, poor housing and working conditions, health risks, and psychological distress. Migration, while offering increased opportunities and higher wages, comes at a cost as workers are relegated to slums or temporary shelters with poor sanitation and a lack of basic amenities. Largely informal employment in the sector leads to a heavy reliance on social capital and trust-based relationships with contractors and peers for workers, exacerbating wage discrimination and harassment for the most vulnerable categories such as women and scheduled castes (SCs). In addition, construction workers also face a heightened risk of developing health issues such as musculoskeletal problems, occupational dermatitis, respiratory infections, and other occupational hazards as compared to other industries.

To address these vulnerabilities, the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, or the BOCW Act, was implemented in 1995 to ensure social welfare for and prevent construction worker exploitation. Under the Act, states were required to set up Building and Other Construction Workers Welfare Boards (BOCWWBs) to register construction workers and promote their welfare through various schemes and benefits. As per the Building and Other Construction Workers Welfare Cess Act, 1996, BOCWWBs levy a 1% cess on construction costs at major building sites, which employers remit to the government. This pool of cess funds is utilised to finance schemes and benefits for supporting construction workers during significant life stages, such as maternity, marriage, education, death, old age pension, and more.

Due to its distinctive self-financing mechanism, this Act is a unique case study for the sustainable governance of social protection schemes. As of July 2024, states have registered more than 5.65 crore construction workers and collected more than 1.12 lakh crores in cess funds cumulatively since the Act's implementation, with around â,¹66,000 crores of balance available. Beyond this, process barriers significantly hinder workers from accessing welfare benefits under the BOCW Act, often manifesting as a combination of bureaucratic inefficiencies, a lack of awareness, and complex application processes.

This paper delves deeper into the process barrier of validation, a significant challenge that impacts welfare delivery. Focusing on one of the major research questions in BOCW implementation, this paper investigates validation processes BOCWWBs employ to verify whether an applicant is a building and construction worker. There are varying entry-level documentation and validation processes in different states, ranging from lenient to stricter models. On the one hand, lenient models make the application process more accessible for vulnerable construction workers, reducing exclusion. On the other hand, more stringent checks inspire confidence in the validity of a BOCWWB's database, enabling quicker delivery of claims without additional verification. Thus, there is a need to strike a careful balance between the two, ensuring that vulnerable categories like interstate migrants and labour chowk workers are not excluded while ensuring sufficient checks for higher confidence in BOCWWB registration data. As large-scale disbursals such as pollution ex-gratia in North India become recurring, with other climate-related Direct Benefit Transfers (DBTs) for relief (e.g., heatwaves) on the horizon, this problem statement becomes even more relevant for efficient welfare delivery.

To study the problem of construction worker validation, the paper first maps out nationwide trends in BOCW implementation. Then, it offers a deeper context of the validation challenge by delving deeper into eight sample states that represent 52% (or 2.94 crore) of India's registered construction worker population: Chhattisgarh, Delhi, Gujarat, Maharashtra, Punjab, Telangana, Rajasthan, and Uttar Pradesh. The study utilised a non-probability purposive design, conducting in-person field visits and virtual semi-structured interviews with 21 government officials, trade union representatives, civil society organisations, and legal professionals. The conversations with stakeholders focused on practical experiences, systemic challenges, and potential innovations to improve the current welfare framework.

Relying on primary data, the paper maps out validation processes followed in the sample states and discusses key challenges that impede efficiency and inclusion. The paper finds that existing documentation processes in most states, which require submitting a proof of employment for 90 days as a construction worker, are most challenging for labour chowk workers, migrant and small construction site workers, who struggle to secure attestations from their employers due to power dynamics and the informal nature of their employment. Furthermore, the validation processes followed by BOCWWBs, which include telephonic and physical checks, are time-consuming and fail to establish an applicant's construction worker status convincingly.

To address this challenge, the paper proposes two alternatives to resolve the validation challenges: peer references from worksite employees or other workers and a worker passbook for employment history validation in a hybrid format. The innovations factor in two design principles or criteria to evaluate the innovations: citizen burden and administrative viability. The peer reference model proposes that, instead of obtaining certification from employers and contractors, the range of stakeholders from whom workers can get certification could be extended. This process, if instituted, will ease processes for small construction site workers and labour chowk workers who typically find it challenging to secure documentation. The hybrid passbook builds on the existing physical passbook required for workers under the BOCW Act by providing a digital alternative that can pave the way for a gradual transition towards a fully digital system as digital literacy and access improve. In its digital format, the passbook could have additional validation features to bolster the confidence of BOCWWBs in the recorded employment history.

Overall, this paper aims to contribute to the ecosystem's knowledge on major gaps in BOCW implementation and drive action towards resolving this critical challenge by mapping the validation process across states and proposing actionable recommendations.

Challenges of Artificial Intelligence Implementation in the E-Commerce Sector in India

Rajesh Kanna Raji Assistant Professor, Vels University, Chennai, Tamil Nadu

The accomplishment of artificial intelligence (AI) in the e-commerce sector presents common challenges that administrations must direct to maximise the effectiveness of AI aids. This paper observes critical challenges faced by e-commerce businesses in implementing AI and its influence on their processes. The challenges include data privacy and safety concerns, the need for skilled flair, grouping with surviving systems, moral thoughts, and customer approval. Addressing these challenges is critical for establishments to influence AI resourcefully, progress customer capabilities, advance operative skill, and gain a reasonable edge in the e-commerce market.

Artificial intelligence needs a lot of data, which raises questions about how this data is gathered, stored, and protected. Implementation of AI necessitates specialised skills that may be lacking in many organisations, highlighting the significance of acquiring or developing these individuals. There are a lot of e-commerce businesses that use old systems that might not work with new AI technologies, making it hard to integrate them. Ethical guidelines and transparent systems are needed because AI can sometimes produce biased or discriminatory outcomes. For businesses to fully utilise AI's potential, it is essential to successfully overcome these obstacles. It may result in enhanced customer experiences, increased operational efficacy, and a stronger market position of competitiveness.

Without going into specifics, the abstract serves as a snapshot of the paper, providing readers with a brief overview of the study's purpose, scope, and significance. It paves the way for a more in-depth examination of each problem and its potential solutions throughout the entire paper.

The focus of this paper is to emphasise on comprehending the difficulties of implementing AI in the e-commerce sector. It suggests that maximising AI's benefits requires identifying and addressing these obstacles. Artificial intelligence systems are responsible and apparent. Research indicates that age-related differences have a substantial impact on how AI is perceived and accepted in the e-commerce industry. Younger employees may require additional support and training to overcome their professed challenges with AI technologies. Experts in the mid-career stage (26-35 years) can play an essential role in encouraging the approval of AI, while the anxieties of younger employees must be lectured. Elder employees (36-45 years and 45+) tend to identify the deliberate value of AI more than their younger equivalents. E-commerce businesses should accentuate the long-term assistances and implication of AI to younger workers in order to nurture a structured and forward-thinking organisational culture. By addressing these challenges through battered preparation, communiqué, and sustenance, e-commerce businesses can enhance the successful execution and getting of AI technologies across all age groups, eventually motivating invention and reasonable benefit in the sector.

Gig Work and the Social Protection Deficit: Lessons from Central and State-Level Initiatives in India

Akhil Alha Assistant Professor, Council for Social Development, New Delhi

This paper examines the evolving landscape of social protection for gig and platform workers in India, situating the discussion within the broader policy and labour rights discourse. Gig workers spanning across ride-hailing, food delivery, logistics, and digital platforms occupy a growing share of the workforce but remain outside the ambit of most traditional labour protections. The analysis begins with an assessment of the Code on Social Security (CSS) 2020, the first national legislation to explicitly recognise gig and platform workers. While the CSS marks a legislative milestone, its design is found to be overly reliant on discretionary registration, fragmented funding sources, and voluntary compliance by aggregators, resulting in significant implementation uncertainty.

The paper maps existing central social protection schemes, revealing structural and operational gaps in coverage, benefit adequacy, and delivery mechanisms for gig workers. It then explores emerging state-level initiatives—in Rajasthan, Telangana, Karnataka, and Jharkhand—that attempt to address these gaps through innovative approaches, such as dedicated welfare boards, accident insurance, and skill development support. While these measures demonstrate subnational leadership, they remain limited in reach, contingent on political will, and vulnerable to fiscal constraints.

Drawing on these insights, the paper argues for an integrated and enforceable national social protection framework that combines universal entitlements with sector-specific benefits for gig and platform workers. Such a framework should mandate aggregator contributions, ensure portability of benefits across platforms and states, and leverage digital infrastructure for seamless enrolment and claims. The conclusion situates the Indian experience in comparative perspective, highlighting lessons from international models while acknowledging the unique political economy of India's labour market. By critically examining the interplay between central legislation, state-level innovation, and the lived realities of gig workers, this paper underscores the urgency of designing inclusive, enforceable, and adaptive social protection systems capable of addressing the vulnerabilities of India's rapidly expanding gig economy.

An Alternative Measure of Agglomeration and Location Choice in India's Textile Industry: A Spatial Econometric Perspective

Debarati Pal PhD Scholar, University of Calcutta, Kolkata, West Bengal
Panchanan Das Professor, University of Calcutta, Kolkata, West Bengal

The development in the field of Economic Geography has led to the construct indices for agglomeration. This study intends to revise the existing Ellison and Glaeser (EG) index based on density and apply it on Indian textile industry. Firstly, it discusses the existing indices for measuring agglomeration along with their drawbacks and incorporates the concept of density in EG index. Secondly, the locational distribution of textile industry in terms of industrial output mass is observed for the year 2001 and 2021 using Annual Survey of Industries (ASI) factory level data. Thirdly, the revised EG-index is calculated using econometric and statistical methods to analyse the degree of natural advantage and spillover affecting the location decisions of textile firms leading to spatial convergence or divergence. Finally, a spatial panel is estimated using the concept of spatial econometrics to determine the factors (employment, emoluments, profit, income, and capital cost) affecting the location decision of the firms.

This study observes that states of Gujarat, Tamil Nadu, Punjab, Haryana, and Maharashtra have spatial concentration/agglomeration of textile industry. West Bengal has industrial concentration of jute, while Delhi and Karnataka have industrial concentration of apparel. The fall in the demand and production of jute has negatively affected the industrial mass of West Bengal. Comprehensively, location decision is not guided by natural advantages and spillovers for cotton, man-made fibre (MMF) and other textiles, while that of jute and apparel are guided by these factors. It is observed that location decision of these industries is guided by cost of production and availability of labour. Neighbouring states characteristics affect the location decision for cotton and other textiles industry. There exists a negative spatial auto correlation and a positive spatial heterogeneity for apparel leading to regional divergence and a core-periphery structure is formed. A positive spatial auto-correlation and negative spatial heterogeneity is observed for jute industry implying a non-formation of core-periphery structure and regional convergence.

Click, Deliver, Thrive? Exploring the Psychological Well-being of Gig Workers in India

Neenu Rachal Philip PhD Scholar, Cochin University of Science and Technology, Kalamassery, Kerala

Santhosh Kumar P. K Associate Professor, Cochin University of Science and Technology, Kalamassery, Kerala

The digitisation of labour has redefined the concept of work, shifting from stable, long-term employment to task-based, technology-mediated arrangements. This transformation is most visible in the gig economy, where platform-mediated work structures are now central to service delivery in sectors such as logistics, food delivery, and ride-hailing. While the gig model offers flexibility and low entry barriers, it also embeds workers in environments marked by income insecurity, algorithmic control, and unpredictable workloads, making the psychological well-being of gig workers a matter of concern for labour researchers and policymakers alike.

This study examines the psychological well-being of location-based gig workers through an integrated framework combining the Job Demands–Resources (JDR) model and the Technology Acceptance Model (TAM). The JDR model explains how work-related demands such as workload, time pressure, and emotional strain can lead to burnout when not balanced by adequate job resources, while TAM highlights the role of perceived usefulness (PU) and perceived ease of use (PEOU) in shaping user experience with technology. Integrating these perspectives, addresses a gap in the literature: while prior studies have explored the physical and economic vulnerabilities of gig workers, how the design and usability of platforms influence psychological well-being remains underexplored.

Using survey data from 412 respondents and structural equation modelling, the research examines the mediating role of PU and PEOU in the relationship between job demands and well-being. Results indicate that high job demands are significantly associated with lower psychological well-being, while job resources, PU, and PEOU show positive associations. Moreover, PU and PEOU partially mediate the relationship between job demands and well-being, suggesting that the design of digital platforms can either amplify or buffer the strain of demanding work environments. The findings contribute to the understanding of well-being in the context of digitised work, demonstrating that platform usability is not merely a technical feature but a labour condition with psychological implications.

In the evolving world of work, where digital mediation is increasingly central, integrating technology use factors into labour studies offers a more complete view of worker welfare and informs both platform design and labour governance strategies.

Macroeconomic Impact of Adoption of New Technologies on Indian Economy: An Analysis Using CGE Modelling Framework

Akhilesh Kumar Sharma Assistant Professor, Institute for Studies in Industrial Development, New Delhi

Industry 4.0 technologies are rapidly evolving during the Fourth Industrial Revolution (4IR). Adoption of these technologies are changing industrial landscape rapidly. Studies suggest that it has significant positive impact on the productivity across sectors and overall economy. Sectors have both forward and backward linkages. Even the productivity change in one sector may have impact on the performance of other sectors also.

The present study aims to understand the possible impact on macroeconomic indicators such as output, gross value added (GVA), employment, trade, revenue, household income among other macroeconomic impacts with the adoption of new technologies across sectors. The study has used the partnership for economic policy (PEP) computable general equilibrium (CGE) Model for simulation exercises. A 68-sector Social Accounting Matrix (SAM) for India for the year 2017-18 has used as its basic database. For our analysis, sector specific productivity shocks have been introduced for simulations.

The results of impact assessment of adoption of new technologies using CGE modelling are promising, showing that the adoption of new technologies has a significantly positive impact on gross domestic product (GDP), real GDP, output, exports, imports, government revenue, and household income, while contributing to lower price inflation. The effect on output varies across sectors due to differences in productivity shocks and the income elasticity of various products and services. Interestingly, the employment effect is neutral (zero) in the case of productivity shocks alone, while it aligns with the labour force growth rate in the scenario combining productivity and labour supply shocks. This indicates that adopting new technologies will not negatively impact employment in the economy. However, there will be decline in the demand of lesser skilled workers in all sectors of the economy except in the rural service sector where demand of less skilled workers will be increased. In addition, the income effect is higher for rural households compared to urban households. Within both rural and urban categories, the lower quintile classes experience a greater positive income effect than the higher-income classes. These findings suggest that new technologies have the potential to promote inclusive growth within the economy.

How do Difficulties in Access to Finance and Business Environment Affect Input Misallocation and Total Factor Productivity of Small and Medium Enterprises (SMEs) in India?

Bhanu Pratap Singh Assistant Professor, Banaras Hindu University, Varanasi, Uttar Pradesh

Small and medium enterprises (SMEs) play a crucial role in India's economic development, contributing significantly to employment generation and industrial output. However, many

SMEs face persistent challenges related to low productivity, often driven by inefficient allocation of resources. This study investigates how access to finance and the broader investment climate affect input misallocation and total factor productivity (TFP) growth among Indian SMEs. Using firm-level data from the World Bank Enterprise Survey (2022), covering 6,348 enterprises across various regions and sectors, this research explores distortions in the allocation of capital and labour. Productivity is estimated using stochastic frontier analysis (SFA), while input misallocation is assessed through the Hsieh and Klenow (2009) framework. To address potential endogeneity—especially concerning overdraft availability and working capital access—robustness checks and an endogenous stochastic production frontier approach are implemented.

The findings reveal widespread inefficiencies in both capital and labour allocation, with capital misallocation being more severe and detrimental to firm performance. Firms with better access to formal finance demonstrate reduced input distortions and improved productivity. Financial constraints not only hinder investment but also limit firms' ability to optimise resource use. Thus, financial inclusion emerges as a critical factor in enhancing firm efficiency. The study also highlights the importance of the investment climate in shaping firm outcomes. Security-related expenditures and the adoption of quality certifications positively influence capital productivity by reducing uncertainty and enhancing operational efficiency. Conversely, frequent power outages have a significant negative impact on both firm productivity and technical efficiency, particularly for manufacturing enterprises that rely on uninterrupted energy supply.

In conclusion, addressing input misallocation in Indian SMEs requires a multi-pronged approach. Policy interventions should focus on improving access to credit, reducing infrastructural bottlenecks, and fostering a supportive regulatory environment. Enhancing the investment climate and ensuring reliable infrastructure can help SMEs unlock productivity gains and play a more dynamic role in India's economic transformation.

Decent Work Assessment for Digital Platform Gig Workers

Aparna Samudra Assistant Professor, Nagpur University, Nagpur, Maharashtra

NITI Aayog's report 'India's Booming Gig and Platform Economy', estimated that approximately 77 lakh workers were part of the gig economy in the fiscal year 2020-21, and is projected to increase to 2.35 crore by 2029-30. The technology- mediated platforms like Uber (in ridesharing), Swiggy (in food delivery), and Urban Company (in personal services) have made it easier for individuals to find such work to earn a living. International Labour Organization (ILO) defines decent work as "productive work in which rights are protected, which generates an adequate income, with adequate social protection." However, the question remains how far these workers achieve 'decent work' standards?

Using a sample of 370 location-based gig workers (including mobility, delivery and home service) in Nagpur, a prominent city of Maharashtra, a Decent Work Index was designed and calculated. This index comprises five dimensions — income security, social security, job security, work security, and skill and representation. Each dimension has been assigned weights based on their relative importance and adapted to suit this new form of "on-demand" algorithm-allocated work. Based on the scores, workers are classified into high, moderate and low decent work categories, and cluster analysis was done to uncover distinct patterns of work conditions for these platform-based gig workers.

The findings show that the workers fall into moderate decent work category and sectoral disparities exist with mobility workers having the lowest score among the groups. Three distinct worker profiles emerged from this analysis: one which faced precarious work conditions with very low income, no safety nets, and weak job quality; second which benefited from moderate security, particularly in terms of social support and stable work; and a third cluster which earned more but often logged in extra-long hours without proper rest or protection. Most workers fall into the first and third categories, showing that secure and fair work is not yet common in the gig economy. The findings reinforce that while the gig economy offers a basic safety net in terms of employment and income, it falls short on other essential components of decent work, particularly in terms of social protections, and opportunities for growth. These observations highlight the urgent need for policy interventions that focus on formalisation, access to social protection, skill enhancement, and worker representation to ensure that gig work aligns more closely with the principles of Decent Work as outlined in Sustainable Development Goal (SDG) 8.

TECHNICAL SESSION **1.6**

Protecting the Precarious: Exploring the Challenges and Legal Safeguards for Gig Workers in India

Brindpreet Kaur Assistant Professor, Rajiv Gandhi National University of Law, Patiala, Punjab
Manoj Kumar Sharma Associate Professor, Rajiv Gandhi National University of Law, Patiala, Punjab

The economic revolution ushered in across the globe because of factors like rising urbanisation and extensive use of smartphones and related technologies, have given rise to a new form of work called gig labour. With the youngest population in the world, and gig workers sized up to 7.7 million in 2021-22, India is at the forefront of this structural change. However, the existing legal framework in India (federal and provincial) does not address the problems and rights of those who are employed outside of traditional employer-employee relationships. Legal reforms enacted in the recent past have not been implemented owing to resistance from various quarters, rising business costs, inconsistent application to various sectors, among others. There is, thus, a need to examine the legal mechanisms and economic, social, and cultural barriers in the enactment and implementation of laws for protecting the basic rights of millions of people in the platform-based gig economy.

This paper addresses the following research questions 1. To what extent do existing labour codes protect the basic rights of platform-based gig workers? 2. What are the legal, institutional, social, and cultural challenges in implementing labour reforms in India relating to platform-based gig workers to ensure minimum wages, social security benefits, and decent work conditions? 3. How to ensure coordination among the Union and States while providing efficacious rights to platform-based gig workers, avoiding overlap of policy and law, given the fact that employment, social security, and social insurance are concurrent subjects under the Constitution of India?

The research shall contribute to providing a strong basis for a policy framework regarding the entitlements of the platform-based gig workers. The study will use a combination of doctrinal and empirical methods of research. In-depth interviews shall be conducted using a structured interview schedule to collect quantitative and qualitative data from workers

and employers to gain insight into the problems, challenges, and legal impediments in the enactment and implementation of basic rights of the platform-based gig workers.

The likely findings are: 1. Keeping in view the high magnitude of persons employed in this sector, there is a strong need for regulating gig work in India. 2. There are systemic and structural challenges in implementing the Social Security Code, 2020, and the state enactments regarding platform-based gig workers. 3. There is a need for coordination and cooperation among the Union and States, keeping in view potential overlap between Union and State laws and policies regarding platform-based gig workers.

Income, Protection, and Growth: Rethinking Work Quality for India's Self-Employed Workforce

Ravi Shankar Rai Assistant Professor, Centre for Development of Advanced Computing, Noida, Uttar Pradesh

Asha Prasad Professor, BIT Mesra Noida Campus, Noida, Uttar Pradesh

Self-employment today forms the backbone of India's labour market, engaging nearly half of the country's working population. From small farmers and street vendors to digital freelancers and gig workers, self-employment represents both an opportunity and a challenge. While it promises independence and flexibility, for many it also means uncertainty, long working hours, and the absence of basic protections.

This paper explores the quality of work among India's self-employed by drawing on national labour data from the Periodic Labour Force Survey (PLFS 2022–23) and the National Sample Survey (NSS), along with policy reports and academic literature. The analysis is guided by the International Labour Organization's (ILO) Decent Work framework, focusing on four key dimensions — income stability, social protection, working conditions, and opportunities for growth. The study finds that income insecurity is the most pressing issue facing self-employed workers. For a large share, earnings are irregular and often too low to ensure a decent standard of living. Gender and location make a significant difference — women, particularly in agriculture and petty trade, earn substantially less than men, and rural workers face greater vulnerability to seasonal and market fluctuations. The research also highlights the limited reach of social protection: less than one-fourth of self-employed individuals have access to health insurance or pension coverage, and awareness about existing welfare schemes remains low. As a result, a medical emergency, crop failure, or loss of clients can quickly push households into debt. Working conditions among the self-employed are often harsh and unsafe. Many operate in poorly equipped environments — farms without protective gear, construction sites without safety nets, or workshops lacking ventilation and sanitation. Even in modern gig and platform-based work, flexibility often masks a new form of precarity. Workers face irregular pay, sudden termination, and constant pressure to meet algorithm-driven targets without any formal

grievance system. For most, autonomy comes with insecurity. Opportunities for training and professional growth are also limited. While schemes such as Skill India, Mudra Yojana, and the Social Security Code (2020) have been introduced to support entrepreneurship and financial inclusion, their impact on informal and rural workers remains uneven. Many still lack the digital literacy, infrastructure, or credit access needed to benefit from new economic opportunities. The digital divide, in particular, prevents a large section of the self-employed from entering emerging online and platform-based markets.

The paper argues that improving self-employment in India requires a broader vision — one that goes beyond promoting entrepreneurship to ensuring dignity, stability, and protection for all kinds of workers. Policy interventions must integrate financial inclusion with universal social security, safer working environments, and equal access to skill development and technology. Addressing these gaps can turn self-employment from a survival strategy into a sustainable and empowering livelihood option. By applying the "Decent Work" lens to the realities of India's self-employed, this paper aims to spark fresh dialogue on how policies, institutions, and digital platforms can work together to build a fairer and more resilient world of work. Strengthening self-employment quality is not just about livelihoods—it is about shaping India's path towards inclusive growth and social justice.

Exploring the Dynamics of Platform Work in Delhi: A Factor Analytical Approach

Ravindra Kumar PhD Scholar, Pondicherry University, Pondicherry district, Puducherry
Md Moniruzzaman Muzib PhD Scholar, Pondicherry University, Pondicherry district, Puducherry
Rita Rani Majhi PhD Scholar, Pondicherry University, Pondicherry district, Puducherry
Waquar Yunus Khan PhD Scholar, Pondicherry University, Pondicherry district, Puducherry
Sivasankar V Professor, Pondicherry University, Pondicherry district, Puducherry, Professor

This study scrutinises the challenges faced by platform-based gig workers in Delhi through exploratory factor analysis (EFA) using responses from 105 participants. Platform work is a modern working system in which the outdated boss-worker association is missing. Under this work regime, the online platform plays the role of mediator between worker and service seeker. Workers get work information and service seekers get workers through this online mediator. Workers need to pay some percentage of commission for getting work. Therefore, a platform worker is a person who gets work through this online mediator and works.

Platforms are a new kind of business that strictly control workers, use their data, and offer insecure, informal jobs. Although for namesake, platform claim that they have provided flexible and entrepreneurial, but in reality, they take away many of the rights and protections that workers used to have in regular jobs. In spite of these, workers are finding new ways to come together forming informal groups, using creative tactics, and often organising outside

of official unions to push back against the power of platforms and demand fair treatment and respect. Their struggle is not only about earning more money but also about being recognised, treated with dignity, and feeling part of a community in an economy that often leaves them isolated and on their own.

A 25-item scale was tested for reliability, yielding a high Cronbach's Alpha (0.928), confirming strong internal consistency. The Kaiser-Meyer-Olkin (KMO) value of 0.907 and Bartlett's Test of Sphericity (χ^2 = 1430.795, $p < 0.001$) established sampling adequacy and justified factor analysis. Principal component analysis (PCA) with Varimax rotation extracted five meaningful factors such as algorithmic control, economic dependence, job satisfaction, legal awareness, and work-life balance. These five factors collectively explained 61.84% of the variance. The findings exhibits that workers perceive algorithmic control, platform commissions, and fatigue as key contributors to reduced earnings, while income distributions reveal that most gig workers earn between 10,000–20,000 per month. Moreover, 85.7% of gig workers reported working more than 8 hours daily, significantly higher than those in primary employment. It also shows that gig work is marked by extended hours, limited social security, weak legal awareness, and high economic dependence on platforms. Overall, the study validates that digital platforms maximise profits by intensifying labour while minimising compensation, reflecting exploitative practices.

An Empirical Study on Digital Transformation and Innovation in Urban Entrepreneurs in Tamil Nadu

Thamilmani R Assistant Professor, Vel Tech Rangarajan Dr Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu

Siji O K Associate Professor, School of Commerce, Vel Tech Rangarajan Dr. Sagunthala Institute of Science and Technology, Avadi, Chennai, Tamil Nadu

Digital transformation and innovation play a significant role in modern business activities due to the shift from traditional methods to digital platforms. These advancements enable easier and quicker access to market functions such as buying, selling, advertising, and promotion. For small and marginal entrepreneurs, digital technology has become essential for streamlining business operations and ensuring stable market participation. Most traders and sellers in Tamil Nadu now rely on digital applications to carry out transactions related to goods and services, as these tools help in understanding consumer behaviour and improving business efficiency. Specific urban areas such as Chennai and Coimbatore have emerged as rapidly growing centres with well-established industrial facilities, communication infrastructure, and transport services. These developments support both buyers and sellers by facilitating effective business communication and transactions. However, there are several challenges associated with digital transformation in urban centres—especially for small and marginal entrepreneurs—such as low levels of digital literacy and a lack of transparency in business communication, which hinder their ability to fully utilise modern digital marketing techniques.

The present study has the following specific objectives: i) to examine digital transformation and innovation among urban entrepreneurs in Chennai; ii) to analyse the status of digital transformation and innovation in selected urban areas of Tamil Nadu; and iii) to suggest suitable policy measures to enhance digital transformation and promote entrepreneurial development in India. The present study is based on both primary and secondary data. Primary data have been collected using a structured interview schedule and questionnaire administered to selected respondents through Google Form link sharing in social media.

The study suggests that the both the central and state governments should implement dedicated training programmes and provide institutional financial support to urban entrepreneurs. These measures are essential for strengthening digital transformation and innovation in the urban entrepreneurial ecosystem.

Premature Deindustrialisation and Jobless Growth: Towards an Innovation-Driven and Sustainable Manufacturing Policy for Atmanirbhar Bharat

Rakesh Ranjan Kumar Sr. Fellow, The International Institute of Migration and Development, Thiruvananthapuram, Kerala

Anjana Rajagopalan Sr. Fellow, The International Institute of Migration and Development, Thiruvananthapuram, Kerala, Economist, Policy Practitioner, Senior Research Fellow

Ananya Chakraborty Senior Programme Research Specialist, World Resources Institute, Chennai, Tamil Nadu, Senior Programme Research Specialist

India's manufacturing sector has stalled, exposing the failure of the National Manufacturing Policy (2011). Both the employment share and value-added share of manufacturing in the economy have declined, placing India at risk of premature deindustrialisation. The sector's low employment elasticity has prevented it from absorbing labour at scale, undermining prospects of reaping the demographic dividend in the world's most populous country. Between 2017-18 and 2022-23, nearly 60 million workers re-entered agriculture, reversing the decline witnessed between 2004-05 and 2011-12. Instead of the 100 million new manufacturing jobs targeted by 2022 and 220 million by 2025, manufacturing employment actually fell by about 1 million between 2011-12 and 2020-21.

While India projects itself as the "voice of the Global South," its economy remains dominated by informality, inequality, and structural regression. The Make in India programme has largely been rhetorical, with little change in ground realities. Rising working poverty in both agriculture and manufacturing—exacerbated by COVID-19—has compounded precarity. Even workers marginally above the poverty line remain highly vulnerable to economic shocks. This highlights the urgent need for a resilient industrial policy that generates decent work and strengthens labour welfare. India's manufacturing is also constrained by its technology base.

Predominantly low-tech, the sector risks being trapped in a low-technology cycle, with sluggish progress in high-tech industries and a missing "middle technology" segment that could serve as a bridge. Moreover, the innovation landscape of Indian firms remains weak and ill-prepared to face Industry 4.0, which demands advanced technological adaptation. This vulnerability is further reflected in India's heavy dependence on imports of information and communication technology (ICT) goods, especially low-tech ICT. With the rising global demand for digital and knowledge-intensive products, self-reliance in ICT manufacturing is critical not only for reducing import dependence but also for creating new export opportunities, particularly to the Global South.

The paper examines post-liberalisation developments in Indian manufacturing using Annual Survey of Industries (ASI) data, classified by OECD ISIC Rev.3 into high, medium, and low technology industries. The analysis highlights structural weaknesses, missing middle-technology industries, and stagnant high-tech growth. It suggests that building competencies across ICT goods with varying R&D intensities could help India move towards a more balanced and innovation-driven trajectory. At the same time, India's production structure remains capital-intensive despite being labour-surplus. This misallocation reduces employment creation, as capital-intensive industries often exhibit low employment elasticity. A balanced approach is required: capital-intensive methods in high-efficiency industries, and labour-intensive strategies in sectors with higher job potential. The study argues for a new-age, innovation-driven industrial policy that addresses premature deindustrialisation, expands decent work opportunities, and aligns with Industry 4.0. Such a policy must leverage forward and backward linkages, promote technological upgrading, and enhance global competitiveness. Only through a holistic and sustainable manufacturing strategy can India achieve Atmanirbhar Bharat while positioning itself as a technological and economic leader in the Global South.

Adaption of Drone System in Chhattisgarh's Precision Agriculture to Enhance Production and Income of Farmers

Kiran Bala Das Assistant Professor, Chandulal Chandrakar Government Arts and Commerce College, Dhamda, Chhattisgarh

This paper examines the role of drone-based precision agriculture in enhancing production and income among farmers in Chhattisgarh, India. Using a cross-sectional descriptive and analytical approach, data were collected from farmers in Dhamda city who adopted drone technology for crop monitoring and spraying. A paired t-test analysis revealed statistically significant increases in both farm output and farmer income post-adoption of drones. Statistical analysis confirmed that, after drone adoption, income rose depending on the crop type. The findings demonstrate that precision agriculture improves input efficiency, reduces labour costs, and contributes to sustainable farming practices. Despite challenges related to affordability, digital literacy, and maintenance, drone adoption supported by government schemes and rental

services presents a viable pathway to improving productivity and profitability in smallholder agriculture.

The study underscores the potential of drones as transformative tools in advancing climate-resilient and data-driven agriculture. With supportive policies, training, and farmer-producer organization-based models, drones can play a central role in boosting rural livelihoods, strengthening food security, and making agriculture more sustainable. However, high initial costs and a lack of technical knowledge remain the main challenges for government in renting models. The discussion highlights drones as catalysts for socio-technical transformation in agriculture, making farming more data-driven and climate-resilient. Precision agriculture with drones contributes to sustainability by reducing environmental harm, conserving water, and ensuring efficient input utilisation. Future adoption will depend on supportive policies, farmer training, shared-use models, and stronger public–private partnerships.

In conclusion, drones offer immense potential to revolutionise farming in Chhattisgarh by increasing yields, reducing costs, and enhancing farmer resilience. With the right ecosystem of policy, infrastructure, and innovation, drones can transform smallholder farming into a more profitable, sustainable, and technologically advanced sector. Overall, drones act as a catalyst for higher productivity and improved income security, paving the way for sustainable and profitable farming in the region.

Service Sectoral Model for Adoption of Intelligent Automation in India

Pooja Sharma Fellow, IBM, New Delhi

In the US, 47% of jobs are at risk of getting automated with intelligent technologies; this number drops to 9%-12%, if automation potential is replaced with automation adoption as the measure of impact. The progression from identifying automation potential to actual adoption in business is a complex journey influenced by various non-technological factors. The terms "automation potential" and "automation adoption" represent distinct phases wherein not all technically automatable tasks transition to actual automation due to other non-technological factors such as economic considerations, socio-political dynamics, and regulatory frameworks.

This study aims to bring the focus to automation adoption as being a significant metric to be considered while assessing technology impacts. Using qualitative interviews with a cross-disciplinary panel of experts comprising banking and technology experts, this study uses directed content analysis to create a sectoral model for adoption of intelligent automation in Indian banking. With over 25 hours of interview recordings, 800 key statements extracted, and a baseline model created using past studies, the study leveraged integrated TOE-TAM frameworks for analysis.

The study found many regional and sectoral factors which are critical for automation adoption. Some factors such as age of the user and infrastructure were not found to be

relevant in this context. Overall, six new themes along with new factor codes were found with the primary data collected. Using tonality of the discussions additional insights on human-machine co-agency were extracted during exploratory analysis of the transcripts. In some cases, direction of the factors were also found to be reversed (e.g., a barrier became an enabler and vice versa). The result was a comprehensive model of themes and factors critical for predicting automation adoption using TOE-TAM framework. While there are generic studies on automation adoption, this is the first study conducted which has regional and sectoral context.

Economic Growth, ICT Penetration, and Female Labour Force Participation: An Econometric Analysis

Rimpy Kaur PhD Scholar, Punjabi University, Patiala, Punjab

Harjeet Kaur PhD Scholar, Punjabi University, Patiala, Punjab

Anupama Uppal Professor, Punjabi University, Patiala, Punjab

Gender quality is a crucial factor in achieving inclusive growth. The present study focuses on the gender inequality in the labour market. The aim is to explore the impact of economic growth and information, communication and technology (ICT) penetration on female labour force participation in the top five largest economies of the world based on the gross domestic product (GDP) – the US, China, Germany, India and Japan. The time period for the study is 2000-2022. The female labour force participation is taken as the dependent variable, while GDP per capita, ICT penetration, are employed as independent variables. Fertility rate is considered as the control variable. ICT penetration is proxied by two indicators – mobile subscriptions and internet penetration. Female education is not taken as a separate independent variable. The interaction term of ICT and female education is included in the model. The data for the female labour force participation, GDP per capita, ICT penetration, and fertility rate are taken from World Bank's World Development Indicators. The data on female education are extracted from United Nation Development Programme (UNDP).

Prior to analysis, various diagnostic tests are applied. The data suffer from cross-sectional dependence, heteroscedasticity and autocorrelation. Also, the Westerlund error correction cointegration test is applied and showed no cointegration in panel dataset. With the fixed effect Driscoll-Kraay standard error method, the results show that there exists a U-shaped relationship between economic growth and female labour force participation. It depicts that GDP per capita has a negative impact on female labour force participation, while GDP per capita square has a positive impact on female labour force participation. ICT penetration has a significant negative impact on female labour force participation. The interaction term of ICT penetration and female education highlights that female education moderates the negative impact of ICT penetration. Fertility rate has a positive impact on female labour

force participation. This paper outlined crucial policy implications, like digital skill training programmes by the nation's governments.

Technological Shift in Steel Production using Green Hydrogen and its Impact on Labour Market Dynamics in India

Shobha Nair PhD Scholar, Amity University, Panvel, Maharashtra

Climate change poses one of the greatest challenges to human existence. The destruction of lives and properties are immense; it requires urgent global action. transition towards low-carbon economies is the need of the hour. The Paris Agreement (2015) has provided a framework for countries for reducing greenhouse gas emissions (GHGs) and to pursue pathways aligned with climate neutrality.

Within this context, India's National Green Hydrogen Mission (NGHM) emerges as a transformative strategy to decarbonise hard-to-abate sectors, particularly the steel industry, which contributes significantly to the country's carbon footprint. The adoption of green hydrogen-based direct reduced iron (DRI-Hâ,,) technology is an alternative to conventional coal-based steel production. This technological shift, however, is not limited to environmental solutions; it will have deeper socioeconomic consequences, especially for the labour market. While demand for skilled labour in areas such as electrolysis, process optimisation, R&D, and renewable integration is expected to rise, unskilled labour in coal mining and traditional steelmaking processes may lose their jobs, potentially displacing large segments of the workforce. Region-wise employment will see restructuring, with coal-dependent regions becoming less important and renewable-energy-rich states will grow significantly.

Furthermore, both backward linkages (such as iron ore, energy, and logistics) and forward linkages (such as construction, automotive, and infrastructure) will be changed by the transition towards green steel, creating both risks and opportunities for value chains. Policy interventions will play a pivotal role in ensuring a just transition: subsidies, mandatory certification, regional diversification strategies, social structuring, and targeted R&D investments are essential to balance environmental imperatives with socioeconomic equity.

Through integration of climate commitments, industrial decarbonisation, labour dynamics, and government interventions, this study situates green steel within the broader agenda of India's energy transition, highlighting both its transformative potential and the challenges in pattern of labour markets.

TECHNICAL SESSION 1.7

Artificial Intelligence and Employment: Implications for the Workforce

Shivani Srivastava PhD Scholar, Indian Institute of Technology, Kharagpur, West Bengal

Kailash Bihari Lal Srivastava Professor, Indian Institute of Information Technology, Kharagpur, West Bengal

The paper explores the transformative impact of artificial intelligence (AI) on employment within Indian organisations, highlighting its broad implications for the workforce in the current organisational scenario. As industries strive to remain competitive in a rapidly evolving digital economy, AI has emerged as a key driver of change by automating repetitive tasks, enhancing decision-making, and improving overall productivity and operational efficiency. In today's organisational environment, where cost optimisation, agility, and innovation are prioritised, AI adoption is accelerating across sectors. This has led to the displacement of certain job roles, the evolution of others, and the creation of entirely new job categories, necessitating new skill sets that combine human intelligence with technical proficiency. Fields such as data science, cybersecurity, AI ethics, and machine learning engineering are becoming increasingly prominent, pushing organisations to invest heavily in workforce reskilling and upskilling. However, many Indian organisations face challenges such as workforce resistance, a lack of digital readiness, and gaps in AI governance. In response, companies must align AI implementation with ethical, legal, and social considerations to ensure inclusive and responsible transformation.

Artificial intelligence can aid managers, educators, and policymakers in developing frameworks to guide organisations through workforce transitions, supporting strategic decision-making while addressing employee displacement and role augmentation. From a policy perspective, the government must play a proactive role by encouraging AI adoption through supportive rules and regulations, public-private partnerships, and investments in research & development (R&D), digital infrastructure, data protection, and skill development initiatives.

Considering AI is still in its early phase as a transformative Industry 4.0 technology, the paper emphasises the need for robust, AI-friendly governance that promotes employment growth, fosters innovation, and mitigates negative societal impacts. These implications underscore the urgency for Indian organisations to adopt a future-ready approach that

balances technological advancement with human capital development in order to thrive in an increasingly AI-integrated business environment.

Impact of Agentic Artificial Intelligence on Labour Market

Ashwini P Research Assistant, Tech Mahindra, Bangalore Urban, Karnataka
Ritika Joseph Business Analyst, Tech Mahindra, Bangalore Urban, Karnataka
Satyam Sharma Analyst, Tech Mahindra, Bengaluru, Karnataka

The advent of agentic artificial intelligence (AI) has initiated a profound transformation in labour markets across the globe, presenting both significant opportunities and formidable challenges. Unlike conventional AI systems, agentic AI demonstrates a greater degree of autonomy, adaptability, and decision-making capacity, enabling it to not only automate repetitive tasks but also augment human capabilities and foster innovation in ways previously unattainable. These developments are reshaping employment dynamics by altering patterns of workforce demand, redefining occupational roles, and creating entirely new requirements for skills and competencies. In the Indian context, the impact of agentic AI is especially noteworthy given the country's demographic advantage and rapidly expanding economy.

India possesses one of the world's largest and youngest labour forces, coupled with a growing digital infrastructure and an expanding technology sector. The integration of agentic AI within industries such as information technology, financial services, healthcare, agriculture, logistics, and manufacturing has the potential to dramatically enhance productivity, improve service delivery, and generate new employment opportunities in emerging fields like AI development, machine learning engineering, data science, and human–AI collaboration design. At the same time, the adoption of these technologies also raises concerns over displacement of jobs in labour-intensive and routine-based sectors, thereby exacerbating inequality and disproportionately affecting vulnerable groups lacking access to digital skills or opportunities for retraining.

To maximise the benefits of agentic AI while mitigating its risks, India must adopt a holistic strategy that prioritises inclusivity and long-term sustainability. Large-scale re-skilling and up-skilling initiatives, particularly targeted at workers in vulnerable sectors, will be critical. Integrating digital literacy and AI awareness into mainstream education, along with fostering public–private partnerships, can prepare the workforce for new employment paradigms. Equally important is the establishment of a robust regulatory framework that ensures ethical AI adoption, protects worker rights, addresses concerns of bias and exclusion, and promotes equitable distribution of economic gains. Overall, while agentic AI presents complex challenges, it also offers India an unprecedented opportunity to catalyse inclusive growth, strengthen global competitiveness, and position itself as a leader in the AI-driven economy of the future.

Technology and Transformation: How ICT Influences Informal and Total Employment in G20 Countries?

Kanish Jain PhD Scholar, Thapar Institute of Engineering and Technology, Patiala, Punjab
Shilpi Tyagi Assistant Professor, Thapar Institute of Engineering and Technology, Patiala, Punjab

This study analyses the effect of technological innovation, particularly information and communication technology (ICT), on labour force participation and employment quality in G20 economies from 2000 to 2023. The Fourth Industrial Revolution (4IR) is rooted in the historical technical upheavals initiated by the Industrial Revolution, which mechanised industry and displaced workers. Today, this surge of innovation is transforming job markets globally. It is characterised by rapid advancements in ICT, the Internet of Things (IoT), and artificial intelligence (AI). Amidst these transformations, Sustainable Development Goals (SDGs) 8 and 9 advocate for robust infrastructure, quality employment, and inclusive economic growth. Despite an emerging domain, the scholarly and policy debates remain divided about the effects of digital innovation on employment quality and inclusion.

Addressing the divergent views, this research contributes by examining the relationship between ICT diffusion and labour market outcomes in a systematic way in G20. Methodologically, the study uses Driscoll-Kraay (DK) regression and an Instrumental Variable Fixed Effects (IV-FE) estimate method to address endogeneity concerns and provide robust outcomes. From the results, it is evident that the utilisation of ICT positively influences labour force participation and significantly contributes to the formalisation of employment. Specifically, increased utilisation of ICT is associated with a reduction in informal employment and an increase in formal sector employment, indicating that digital transformation may facilitate the creation of quality jobs. These results have significant implications for policy. Policymakers and institutions should regard ICT as a means to enhance productivity and facilitate inclusive growth in the labour market. Information and communication technology should be considered as a catalyst for inclusive overall growth. Investing in digital infrastructure and skills training can enhance the optimistic influence of ICT on employment, particularly in the creation of formal jobs.

Who Leaves and Who Stays? Reproduction of Artisanal Production through the Interaction between Institutions and Artisans in Bengal

Satyaki Dasgupta Assistant Professor, Christ University, Bengaluru, Karnataka

This study investigates the dynamic interplay between institutions and artisans in shaping the reproduction and evolution of craft. Utilising original survey data from 480 artisans across 6 districts of West Bengal, we examine both elite and quotidian craft practices through the analytical lens of developmental evolutionary economic geography. We employ a developmental

evolutionary economic geography framework which integrates institutional approach to geographical economics, geographical political economy, and evolutionary approach to economic development. This framework is particularly well-suited to understanding craft production, which is highly path-dependent—shaped by generational skill transmission, spatial clustering, and historically contingent development pathways. We analyse the ways in which economic development is formed by institutional mediation and interactions between artisans and institutions, and how the economic landscape characterised by path dependency evolves incrementally. This framework emphasises how institutional mediation and localised interactions co-produce economic development and contribute to the path-dependent evolution of craft-based economies.

Our findings challenge the deterministic view that quotidian crafts are inevitably in decline. Under certain institutional conditions—including targeted state interventions, non-governmental organisation (NGO)-led training programmes, and knowledge spillovers—some quotidian crafts not only survive but evolve into more commercially viable, elite forms. This entails a movement of the artisans from an old path of quotidian craft to a new path of elite crafts. It would, however, be incomplete to state that only elite crafts would survive. Institutions like workers' cooperatives and spillover of knowledge can also help in the survival of crafts. At the same time, we show that craft persistence is not inherently positive: survival may be driven by exploitative labour practices, particularly the undervaluation of women's work, or by a lack of alternative employment opportunities.

We also document instances of institutional failure—such as corruption in cooperatives or inadequate state support—that contribute to the stagnation or decline of craft production. While prior scholarship has emphasised the structural barriers faced by artisans, this research highlights how various institutional arrangements—formal and informal—can foster resilience and transformation within artisanal sectors. We also contribute applying a developmental evolutionary economic geography framework to the unique context of artisans. To our knowledge, this is the first study in the Indian context to apply a developmental evolutionary economic geography framework to primary field data.

Global Value Chains and Skilled-Unskilled Wage Gap in Developing Economies: A Sectoral Analysis

Kumar Rohit Junior Consultant, Institute of Economic Growth, New Delhi

International fragmentation of production processes via global value chains (GVCs), which give rise to the international division of tasks, and of labour, have given rise to several debates related to economic development. Some of the most important issues in this regard are related to possibilities and distributions of productivity gains, quantity and quality of employment, and distribution of total value-added generated along GVCs between different

factors of production, different types of labour, and countries/regions participating in GVC-related trade.

This paper analyses the relationship between GVC integration and the intra-sectoral skilled-unskilled wage gap in developing economies (DEs). Using detailed industry-level data for 31 industries in 8 DEs over the period 1995-2009, we examine the relationship of both GVC participation and position with intra-sectoral skilled-unskilled wage gap in DEs. Our analysis suggest that while integration within GVCs through backward linkages has a weakly significant negative association with intra-sectoral skilled-unskilled wage gap in DEs, integration in GVCs through forward linkages, and upstream positions, exhibits significant positive association with the intra-sectoral skilled-unskilled wage gap in DEs.

Examining these associations separately for manufacturing and services industries, we find that forward GVC participation displays a strongly significant positive association with the intra-sectoral skilled-unskilled wage gap in manufacturing GVCs and a weakly significant positive correlation in services GVCs. On the other hand, the negative association between backward GVC integration and the intra-sectoral skilled-unskilled gap is not found to be significant. Furthermore, while GVC position index displays a positive correlation with the skilled-unskilled wage gap in both manufacturing and services GVCs, it displays statistical significance only in the case of services sector.

We discuss these results in the light of various factors such as the dissemination and adoption of capital-intensive and skill-biased technology intensive production techniques, the kind of GVC tasks and activities taken up within industries in DEs, as well as the channels of informality.

Does ICT Adoption Drive Jobless Growth in BRICS+?

Aarushi Rajpal PhD Scholar, Panjab University, Chandigarh, Chandigarh
Suman Makkar Professor, Panjab University, Chandigarh, Chandigarh

In the contemporary digital era, information and communication technology (ICT) reshapes the economic dimensions, driving economic progress and potentially transforming the labour market dynamics. One of the crucial parameters, serving as a measure of the inclusiveness of economic progress, is employment elasticity to growth, that is, the extent of employment driven by economic growth. While prior research studies raise the debate on whether technology induces job-creating or jobless growth, the studies are constrained to the ICT-growth and ICT-employment nexus, and lack a way to trace the role of ICT as a determinant of employment elasticity to growth.

This study attempts to empirically examine the role of ICT adoption in influencing employment elasticity to growth in BRICS+ from 2001 to 2023. Methodologically, the study

utilises the Driscoll-Kraay (DK) standard error estimation technique and Instrumental Variable Fixed Effects (IV-FE) models to address plausible endogeneity and ensure robust outcomes. The findings strongly support the adoption of ICT as a positive determinant of employment elasticity to growth, indicating that economic prosperity in BRICS+ can translate into employment gains when complemented with technological advancements. Information and communication technology adoption acts as a catalyst in ensuring labour-absorbing economic expansion, stimulating labour inclusivity, and sustainable job creation. Technological advancements align directly with global development priorities, particularly Sustainable Development Goal (SDG) 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 10 (Reduced Inequalities).

The findings highlight the importance of ensuring equitable ICT adoption, particularly in marginalised regions and among disadvantaged groups. By aligning technological adoption with inclusive development strategies, BRICS+ economies will have the ability to translate productivity-driven growth into sustainable job creation and progress towards the SDGs. The study suggests policymakers to strengthen digital infrastructure capacity, promote digital literacy, and ensure last-mile ICT connectivity, thereby raising the share of growth that translates into labour-absorbing investments without sacrificing productivity gains.

Can Policy be Recalibrated to Ensure Gender Inclusive Outcomes in the Platform Economy? Insights from India's Experiences

Kaushiki Sanyal Fellow, JustJobs Network, New Delhi

Technological advances and the rapid expansion of India's gig economy are creating new opportunities for flexible work. This has a huge potential to increase women's labour force participation in India. Women are increasingly entering platform-mediated jobs in home services, domestic work, delivery, freelancing, and social commerce, which allow them to balance paid work with caregiving responsibilities. Gig workers made up 1.5% of India's workforce in 2019–20, and their numbers are projected to rise to 23.5 million by 2029–30 and 61.6 million by 2047. Yet, women account for only 28% of online gig workers in India—significantly lower than in the United States. The promise of flexibility often masks structural disadvantages. Women in gig work face irregular earnings, weak social protection, and insecure contracts, compounded by the absence of gender-sensitive labour policies. They earn 8–10% less than men, reflecting occupational segregation and constraints linked to unpaid care work. Moreover, digital platforms frequently replicate the vulnerabilities of informal work. Algorithmic management and opaque rating systems limit autonomy, while women are often channelled into low-skill, feminised roles. Legal ambiguity surrounding gig work further restricts rights and entitlements.

To ensure that gig work enhances rather than undermines women's economic empowerment, flexibility must be accompanied by security. Key interventions include

portable social security, minimum wage protections, grievance redress mechanisms, collective bargaining rights, and workplace safety—especially in male-dominated or high-risk sectors. Policymakers and platforms must build a growth-oriented ecosystem without sacrificing fairness, inclusion, or justice. Women's participation is central not only to equity but also to India's broader economic growth.

This paper draws on research done by the JustJobs Network to examine India's platform economy through a perspective of gender. It situates India's experience in relation to other countries of the Global South and proposes concrete steps to tackle persistent inequalities while promoting women's empowerment through digital work.

Platform Labour and the Indian State: A New Interface?

Debopriya Shome PhD Scholar, University of Bristol Business School, Bristol, England

Labour platforms are key actors transforming the dynamics of work and employment. Recent scholarship on platform work has effectively taken the workplace as the entry point to demonstrate the expansion of disaggregated forms of employment relations in the Global North. Building on these lines of enquiry, scholars from the Global South have emphasised the relevance of "informality" and "informalisation" as key concepts and processes that reproduce and reinforce the further expansion of platform work. In this regard, the variations within the national context, and particularly the role of the state, are fundamental. However, academic discussions on the relationship between the state and platform work remain limited. In India, conservative estimates suggest there are 7.7 million platform workers. This rapid expansion is occurring against a backdrop in which the Indian state is officially pursuing aggressive digitalisation.

Against this backdrop, the present study poses two research questions: How does the state influence work practices in local platform economies? How do platform workers interact with the state? By addressing these questions, this paper seeks to present empirical observations on the relations connecting the state and platform workers, while also advancing arguments regarding the particularities of platform expansion in the Indian context. This study draws on data collected through semi-structured interviews and non-participant observation, including 40 interviews conducted in Kolkata with workers from Ola (ride-hailing) and Zomato (food delivery), as well as other stakeholders such as union leaders, platform managers, and government officials.

Preliminary analysis reveals how platform workers negotiate institutional practices and state-imposed regulations. The condition of informality, a mediating principle for platform work in India, is reinforced through informal interactions with state actors, particularly the police and union leaders. Although the state is often complicit with platform companies, the relationship between the state and platform workers is not solely defined by antagonism.

Relative to the associational power of workers, the state may adopt a more conciliatory approach. Furthermore, actions and resistance from both the state and labour are dispersed across multiple sites and are dynamically intertwined. From a labour perspective, workers can act individually, in informal solidarity, or in non-workplace settings to engage in negotiation. This paper argues for reframing the state–labour interface as a site of dynamic interaction between the relevant actors.

How Discrimination in the Labour Market Influence Trade in Global Value Chains: A General Equilibrium Approach

Siddhant Mukherjee PhD Scholar, Ashoka University, Sonipat, Haryana

Sushobhan Mahata PhD Scholar, University of Calcutta, Kolkata, West Bengal

Avishek Bose PhD Scholar, St. Xavier's College (Autonomous), Kolkata, West Bengal

The paper attempts to revisit the extant body of work on how perfect competition helps in driving out discrimination through a general equilibrium lens. The findings are significant in the sense that, while assuming standard narratives, in an economy with both discriminating and non-discriminating sectors it is the latter that is forced to vanish. The paper, using a multi-sector model of the economy, carefully examines the various inter-linkages and how they in turn influence the disappearance of sectors. The paper introduces the idea of an emerging sector and its role in reducing dependence on backward GVC. Findings indicate that the arrival of the emerging sector with modified inter-linkages prevents either sector from vanishing and how this influences the overall welfare in the economy. The formal specification and theorisation of vanishing sector was first attempted by Beladi et al. (2016), which defines it as a phenomenon of disappearance of certain sectors in an economy amidst large exogenous shock causing finite change in the production structure. However, the idea of vanishing sector in trade theory was hidden in the notion of complete specialisation in Ricardo (1821). Its extension for a small open economy could be found in Jones (1974), nonetheless, without the explicit mention of vanishing sector.

We put forward the idea of an emerging sector and explore its role in reducing reliance on backward global value chains (GVCs). This idea draws inspiration from real-world policy efforts—for example, India's Make in India programme, which focuses on strengthening domestic industries and creating jobs for young workers. Our model shows that when such an emerging sector is introduced, and when its connections with the rest of the economy are carefully structured, the problem of "vanishing sectors" can be avoided. In fact, we find that these new inter-linkages prevent either the discriminating or non-discriminating sector from disappearing. The creation and nurturing of emerging domestic sectors can offset these risks, ensuring that the gains from reduced wage inequality are more broadly shared without undermining economic diversity.

Determinants of Job Satisfaction of Gig Workers in the Food and Beverage Industry in Mumbai Metropolitan Region

Khushboo Ashok Lala PhD Scholar, Somaiya Vidyavihar University, Mumbai, Maharashtra

Sanjay Rode Associate Professor, Somaiya Vidyavihar University, Mumbai, Maharashtra

Job satisfaction has been a matter of concern among workers across different sectors. It is a crucial issue in the growing gig economy, especially for temporary workers employed within the food and beverage industry. This study explores various factors that influence job satisfaction among gig workers in the food and beverage industry in the Mumbai Metropolitan Region (MMR). Gig workers, including cooks, cashiers, cleaners, and support staff, usually work on a temporary or part-time basis, and often lack the benefits of formal employment. With the gig economy rapidly expanding in India's urban areas, particularly in Mumbai, it becomes imperative to understand the factors that satisfy or dissatisfy gig workers in their jobs.

Based on personal interviews conducted with 2,000 gig workers across the Western, Central, and Harbour regions of Mumbai, this study analysed a variety of factors such as age, gender, income, work environment, employer support, access to health benefits, appointment letters, and opportunities for growth. The research found that workers who received formal appointment letters and employer support during health emergencies, worked in a respectful and clean environment. They had cordial relationships with their co-workers and reported higher job satisfaction. These conditions provided them with a sense of recognition, stability, and belonging. On the other hand, job dissatisfaction is linked to high stress levels, lack of job promotions, absence of performance-based incentives, and workplace issues. In addition, ownership of household items such as refrigerators was associated with higher satisfaction levels. The research suggests that job satisfaction among gig workers depends on wages, workplace conditions, employer treatment, and availability of social security benefits.

To improve satisfaction, employers should provide formal job contracts, health-related support, and recognition of the work put in by the workers, while policymakers should design inclusive labour laws and welfare schemes that address the specific needs of gig workers. By improving working conditions and offering basic benefits, both businesses and the government can help to create a more motivated, stable, and productive gig workforce in the food and beverage sector.

Theme 2

Education, Employment and Labour Markets

KEYNOTE PAPER

Education, Employment and the Indian Labour Market:
An Assessment of Sustainability Transition

Bino Paul, Professor, Tata Institute of Social Sciences, Mumbai, Maharashtra

For a socio-economic system, coherence between education and employment is crucial for its sustainability. India presents a unique case of abundance in people and skills, while its economy is in expansion. Although access to schools and higher education has increased substantially over the years, India's generation of quality jobs for fresh entrants to the labour market remains a question of concern. While the literature is replete with empirical studies on outcomes such as employment, wage, unemployment, and labour force participation, assessing whether education and employment move in tandem and generate quality jobs sustainably opens new policy dimensions for decent employment in the context of disruptive technologies and sustainability transitions. An educational system that provides relevant and realistic knowledge and experience connects aspirants with desirable labour-market outcomes, such as decent jobs, earning living wages, improving the family's living standard, wellness, participation in creative activities, and redemption from the clutches of inequality. A transition to a sustainable impact pathway requires that outcomes be inclusive, not having over-reliance on regions or identities. Using the microdata and other evidence, we explore the co-movement of education and employment over the last decade in India, particularly to build an understanding of the dynamics of decent jobs for youth. Moreover, the paper engages with essential questions of how the labour market responds to new technologies and the growing realm of the circular economy. From a policy perspective, the patterns analysed in the paper provide helpful cues for examining the sustainable trajectories of public education finance. Another curious aspect is the Government policy on employment-linked incentives. While the policy aims to create many jobs, it assumes a strong link between education and industry. As discussed in the extant literature, micro, small and medium industrial units remain significant sources of employment. Many of these firms are part of the value chains involving large firms. Their upgrading is not necessarily the substitution of labour. Instead, it is a transition to more skilled jobs. We examine if evidence points to this pathway. The paper will discuss probable impact pathways for the policy. By integrating empirical evidence with policy analysis, we advance the discourse on sustainable employment transitions in India.

TECHNICAL SESSION 2.1

Earning Differentials among Heterogeneous Platforms and Non-Platforms: Evidence from Two Cities in India

Jeemol Unni Professor, Ahmedabad University, Ahmedabad, Gujarat

Ravikiran Naik Assistant Professor, FLAME University, Pune, Maharashtra

Sonal Yadav Assistant Professor, Amrut Mody School of Management, Ahmedabad, Gujarat

Akshan Gupta Research Associate, Amrut Mody School of Management, Ahmedabad University, Ahmedabad, Gujarat

According to NITI Aayog, around 7.7 million workers participated in the gig economy in 2020–21, a number projected to rise to 23.5 million by 2029–30. While much of the existing debate views digital platform work as precarious, our analysis argues that there is substantial heterogeneity within the platform economy. Workers operate under different contractual arrangements, across varied industrial sectors, and face diverse returns to education and skills.

Our research investigates how earnings and returns to education differ between platform and non-platform workers within the same sectors, while also examining gender and spatial dimensions of these variations. The study focuses on two sectors of digital platform work: education (e.g., Unacademy) and service provision (e.g., Urban Company). Analysis of three models indicates that both platform and non-platform sectors exhibit statistically significant gender wage gaps, with female workers earning less. However, the gender penalty is smaller in the platform sector, suggesting that digital platforms may provide relatively better opportunities for women compared to traditional forms of work. With respect to education, the findings highlight clear differences. Among platform workers, significant returns to education are observed only at the graduate and postgraduate levels, whereas for non-platform workers, returns increase consistently with every additional level of education. This indicates that platform workers require higher thresholds of education before experiencing significant gains in earnings, thereby limiting benefits for those with lower qualifications. The study also reveals strong spatial effects. In Ahmedabad, platform workers in the service sector report higher earnings compared to their non-platform counterparts, whereas in Pune, platform workers in the education sector earn more, reflecting the city's strength as an education hub.

Overall, our results demonstrate that platform work is not uniformly precarious. Instead, gender, education, sectoral characteristics, and local context shape workers' opportunities, with platforms offering real avenues for empowerment under specific conditions.

Returns to Education in Non-farm Sector of Punjab

Anupama Uppal Professor, Punjabi University, Patiala, Punjab

In this paper, an attempt has been made to study the impact of education on individual's earnings. Though the human capital theory says that the earnings of an individual depend upon his/her individual characteristics, but we know that several structural factors have their impact on average earnings of the individuals. These factors include the relative dominance and structure of a particular sector, type of jobs available in the economy, and also the quality of education. Though, we have not tried to capture the impact of quality of education on individual's earnings but factors like wage distribution may reveal such patterns, especially when a large proportion of Indian education system (especially on quality standards) is being shifted to the private sector or the entry to the standard high ranked public institutions has become more and more restricted, given the growth of young population willing to attain higher education.

In the context of the non-farm sector of Punjab, using the Mincerain model on unit level records of Periodic Labour Force Survey (PLFS), this paper shows that in aggregate terms, the average earnings are positively related with the level of education. Further, this relationship becomes stronger as we move from primary education to tertiary education but the impact becomes weaker or is even lost for the workers with vulnerable employment status, employed in low paid informal sectors belonging to the bottom wage quintiles. Their marginal returns to education are also very low and even negative showing a high opportunity cost of improving their education status instead of participating in labour market – a market which does not reward the persons on basis of their educational attainments. On the other hand, the positive impact of regular jobs in formal sector and tertiary level of education is indisputable. It has also been found that the persons with formal technical and vocational degrees are able to earn more than those with traditional degrees. Finally, the average earnings in the organised sectors like government/local bodies, public sector enterprises, co-operatives etc., are much higher than those employed in informal sectors, nearly for all levels of education. However, the persons belonging to lower wage quintiles are deprived of these positive qualities of jobs and hence remain trapped in low paid activities which discourage them from investing further in improving their education and skills.

This paper suggests that there should be greater emphasis on technical and vocational training, and it should be made an essential part of school curriculum so that the students have a clear choice before entering the higher education system. Affordable access to tertiary

education is the key to getting higher returns from education and this is very important for the persons belonging to low income categories. The government should not shy away from expanding its higher education facilities rather than contracting them or letting the private sector expand unhindered. Finally, various studies are echoing the message that it is only the formalisation of jobs that gives a person decent returns and values his/her acquired abilities. This message should have a meaningful impact on policy making when the country is aiming for 'employment for all'.

Stylised Facts on Own-Account and Hired Worker Establishments in India's Unincorporated Sector

S Chandrasekhar Professor, Indira Gandhi Institute of Development and Research, Mumbai, Maharashtra

Sandeep Yadav PhD Scholar, Indira Gandhi Institute of Development and Research, Mumbai, Maharashtra

The Indian experience contradicts one of the stylised facts which is that the importance of the informal sector will decline with growth and development. The informal sector accounted for 45% of India's Gross Domestic Product (GDP) in 2022-23 and nearly 75% of the workers were employed in it. However, one other fact appears to be true in the Indian context. It is that informal firms are small, unproductive, and stagnant.

Understanding India's unincorporated sector and extent of informality in labour market requires analysis of data from two complementary surveys, viz. Annual Survey of Unincorporated Sector Enterprises (ASUSE) and Periodic Labour Force Survey (PLFS). These two surveys are complementary in the sense that ASUSE is an establishment survey, while PLFS is a household level survey. Information on Own-Account Establishments (OAE) and Hired Worker Establishments (HWE) and their operational characteristics is available from ASUSE. From PLFS, we get estimates of earnings of all workers including the self-employed individual while the estimates from ASUSE reflect the value added by the establishment.

In this paper, we present stylised facts on the unincorporated and informal sector based on analysis of ASUSE data for the years 2021-22, 2022-23, and 2023-24. The objective of the paper is to present the consistent patterns on operational characteristics of the enterprises that are evident from the three recent rounds of ASUSE. We present facts pertaining to size, geography of jobs, share of different states in gross value added, patterns in sub-contracting, productivity, gender, access to credit, business practices etc., and situate them within the extant literature. Where appropriate, we draw parallels between estimates from PLFS and ASUSE. In order to provide a perspective over time, we also utilise estimates from non-agricultural enterprise surveys conducted in 2005-06, 2010-11, and 2015-16.

Roads to Security: Infrastructure and Labour Market Formalisation in India

Reshmi Sengupta Associate professor & Head, Department of Economics, FLAME University, Pune

Debasis Rooj Associate Professor, Flame University, Pune, Maharashtra

This paper examines whether rural road development contributes to the formalisation of employment in India. Although roads are frequently linked to higher labour market participation, their causal effect on job quality remains underexplored. To address this gap, we examine how road connectivity influences access to formal jobs, using individual-level data from the Periodic Labour Force Survey (PLFS, 2017–2023) merged with district-level road expansion records under the Pradhan Mantri Gram Sadak Yojana (PMGSY). We employ a high-dimensional fixed effects instrumental variable regression model to account for the potential endogeneity of road placement. This strategy controls for unobserved heterogeneity and standard shocks while exploiting spatial and temporal variation in road development. Our analysis focuses on key outcomes of labour market formalisation, including written contracts, paid leave, and social security benefits, while also examining commuting patterns as a channel and unemployment duration as a robustness check.

The findings reveal that road connectivity significantly raises the probability of job formalisation. Specifically, instrumented road access increases the likelihood of workers holding written contracts, accessing paid leave, and receiving social security benefits. In addition, road expansion enhances long-term contract stability and promotes commuting for work, highlighting improved spatial mobility as a key mechanism. Robustness checks confirm that road development reduces the duration of medium-term unemployment spells, underscoring its role in mitigating job search frictions. This study contributes to three strands of literature. Firstly, it provides rare micro-evidence on the causal link between infrastructure and job formalisation, moving beyond the focus on employment creation. Secondly, it identifies commuting and contract duration as mechanisms through which roads affect labour market outcomes. Thirdly, it documents how infrastructure investment reduces the persistence of unemployment.

The findings from our study suggest that rural road programmes should be recognised not only as growth-enhancing investments but also as instruments of labour market reform. By expanding access to stable and protected jobs, roads can accelerate the transition out of informality, foster inclusive development, and strengthen worker welfare.

Skill Mismatch and Labour Productivity: A Panel Data Analysis for India

Rajarshi Majumder Professor, Department of Economics, University of Burdwan, Burdwan, West Bengal

Skill mismatch of on-the-job workers or the gap between qualification possessed by a worker and the qualifications necessary to perform the work at hand leads to allocative inefficiency

and can have serious repercussions for the economy. This mismatch can take two forms – over-qualification (when qualifications possessed is more than required for the job) and under-qualification (when qualifications possessed is less than required). Workers with less skill are less productive while those with excess skill may not work with intended intensity leading to being less productive than optimum as well. In either case, as productive levels suffer, gross output and income levels are also less than optimum, creating impediment on the path of development.

In this paper, we seek to examine this issue of on-the-job skill mismatch in India with reference to the National Classification of Occupations (NCO) in line with International Standard Classification of Occupations (ISCO) and National Skill Qualification Framework (NSQF). Our first objective is to estimate at the National, State and Sector level, the proportion of workers that are Over-educated/Under-educated for the occupation they are currently engaged in according to the above framework and identify factors that lead to such mismatch between qualification and occupation. In the second part of the study, we examine the impact of such mismatch on regional and sectoral productivity differentials using a Panel data framework.

The paper adds value on three counts by examining a sparsely researched topic in Indian context. Firstly, we estimate extent of skill mismatch disaggregated by gender, location, social group, skill level, industry, occupation and State – something not done so far. Secondly, we go further to identify the determinants of mismatch, over-education and under-education separately. Thirdly, we look at the impact of mismatch on Labour Productivity in a Panel data framework, thus incorporating time effect as well.

Broad results suggest that more than half of workers in India are under-qualified for the occupation they are in and close to two-thirds suffer from skill mismatch as per the ISCO and NSQF typologies. Mismatch is higher in rural areas, among females and marginal social groups. There is a U-shaped relation between chances of mismatch and both years of formal education and age. The nature of mismatch is however different at the two ends. While at the lower ends, mismatch is mostly because of under-qualification or overemployment, at the higher end mismatch is mostly due to over-qualification or underemployment. Probability of being under-qualified is lowest and that of being overqualified is highest for the casual wage workers indicating that the bargaining mechanism in casual labour market operates as a selective valve barring entry of under-qualified workers but allowing overqualified workers into it – a process that signals presence of a substantial reserve army of overeducated labour in the market.

Skill mismatch, as hypothesised, has a significant negative effect on labour productivity. Our counterfactual simulation exercise reveals that allocative inefficiency in the labour market in the form of mismatch between skill possessed by a workers and that demanded by the job in which (s)he is engaged is resulting in 25% loss in labour productivity. The government, industry, and academia should note these issues and reconfigure their programmes to achieve optimum manpower allocation in the economy.

Women and Future of Work: An Analysis of Employment, Education, and Access to Re-skilling in Digital Economy

Ellina Samantroy Jena Fellow, V.V. Giri National Labour Institute, Noida, Uttar Pradesh

The ongoing transformation in the labour market driven by digitisation, automation, and the rise of gig economy has led to unprecedented changes in the world of work. While these shifts have created new avenues for women employment, providing access to emerging sectors, there have been the prevalence of persistent gender disparities that continue to limit women's full participation in the workforce. Women's labour market participation continues to lag behind that of men, reflecting significant inequality and challenges in the labour market. Despite increased educational attainment among women, women's labour force participation remains disproportionately low, and their access to new skill development and re-skilling opportunities remains limited. Amid the existing inequalities in the labour market, the ongoing technological transformation has led to the rise of new forms of employment alongwith shifting skill demands. Emerging forms of work while offering new opportunities—also present unique challenges for women, particularly in terms of access to digital infrastructure, skills training, and formal employment protections.

The present paper critically examines the challenges that women face in accessing education, training, and employment opportunities in the contemporary labour market. It investigates the impact of digitalisation, automation, and the expansion of the gig economy on women's employment opportunities and overall labour market outcomes. It also investigates structural barriers that hinder women's access to education and re-skilling in emerging digital sectors. In addition, it identifies the new skills and types of training that are necessary to enable women to adapt to the shifting demands of the labour market. From a theoretical perspective, the paper uses feminist frameworks to understand how new technologies are reshaping women's workforce roles thereby exacerbating existing gender inequalities. The paper also analyses the range of existing governmental policies aimed at promoting gender equality in the labour market particularly in the context of advancements in digitisation and rise of new forms of employment in the future of work.

Drawing on secondary literature and unit-level data from the Periodic Labour Force Survey (PLFS) for individuals aged 15–59 years, the paper identifies key trends in gendered employment patterns, sectoral shifts, job quality, access to vocational training etc. It also reviews current policy frameworks to assess their role in addressing the gender implications in the future of work. The findings underscore the urgent need for inclusive policy interventions that prioritise gender-responsive skill development and labour market integration strategies to promote greater inclusion of women in the future of work.

TECHNICAL SESSION 2.2

Long-Term Job Search and Unemplyment in a Developing Economy: How Fruitful is Job-Seach in India?

Paaritosh Nath Assistant Professor, Azim Premji University, Bengaluru, Karnataka

Rahul Menon Associate Professor, O.P Jindal Global University, Sonipat, Haryana

The cross-sectional nature of Indian employment surveys limits a true understanding of labour market dynamics. Using innovations in official national-level labour surveys that track urban individuals across different quarters, the following work studies transitions from unemployment to employment — defined as the job-finding rate — to understand whether those seeking employment are able to find suitable work in urban India. We examine the distribution of unemployment durations in urban labour markets, how they have changed over time and the factors affecting the same. Finally, we assess the returns to job search by analysing whether longer unemployment durations ultimately lead to higher-wage employment, or instead, result in poorer job matches and wage penalties.

Our analysis reveals significant weaknesses in the urban Indian economy over the period 2017 to 2023. On an average, only 17% of unemployed individuals in any quarter find a job in the next quarter. Job-finding rates are the lowest for women, the young and the highly educated. Hazard rate analyses reveals that the same cohorts take the longest time to find jobs, with a majority remaining unemployed even after multiple quarters of job search. We demonstrate the impact of the pandemic on urban labour markets in two ways. Not only are job- finding rates significantly lower in the post-lockdown period relative to pre-lockdown, there has also been a shift in the nature of jobs created, with casual work rising and regular wage and self- employment falling post-lockdown. Longer time spent in job search results in lesser chance of finding regular wage job, higher probability of remaining unemployed, and lower earnings. Previous work experience helps one in getting a job, but not necessarily in securing higher earnings. Our analysis has important policy implications for understanding labour market dynamics and for the design of urban employment schemes in India.

Who Gains More from Tertiary Education? Analysis of Earning Gap with Indian Data

Panchanan Das Professor, University of Calcutta, Kolkata, West Bengal

The basic research question of this study is how tertiary education improves graduates' earnings potential to examine how education affects earning gap by using causal inference approach with Periodic Labour Force Survey (PLFS) data in India. In India, gender gap in earnings persists despite the improvement in labour force participation and educational attainment among young women as observed over different waves of PLFS. This study examines the role of tertiary education in explaining gender earning gap in different type of employment with Indian data.

We estimate the earning gap for self-employment and wage employment in private sector enterprises and public sector enterprises by using propensity score matching. In estimating propensity score, some covariates are incorporated that are expected to be connected with the capability in taking risks of unemployment spell, job uncertainty, and instability in earning. In this study, treated observations are working people with tertiary education and controlled observations are working people with secondary education.

The study observes that gaining effect of higher education is higher among graduate females than among graduate males in any type of jobs considered in this study. Average treatment effect of tertiary education on pay was the highest in private sector jobs both for males and females, but it was much higher for females.

Earning Differentials and Return to Education in India: Recent Estimates from PLFS 2023-24

Amaresh Dubey Visiting Senior Fellow and President, Centre for Social and Economic Progress, New Delhi

In this paper, we calculate returns to education in India. We deploy unit level data from the Periodic Labour Force Survey for the year 2023-24. For calculating/estimating returns to education, we use Mincerian Wage Equation and correct for sample selection bias using Heckman's model. We find that returns to education is positive and increases with every additional level of education for entire sample of those employed. However, when we estimate the returns to education by employment type, for regular wage/salaried employment, returns increase monotonically and to a lesser extent for self-employment. We also find that that there is no significant relation between wages and education for the casual workers. The socio-economic factors like caste, gender and place of residence etc appear to play an important

role in determining income and employment probabilities. Our analysis suggests that at the higher levels of education, i.e. graduate and above, returns are significantly higher than those for below the graduate levels. It implies, therefore, that additional years of education, specially technical degrees and diploma/certificate (both below and above graduation) yield better returns.

Globalisation and Labour Quality in a General Equilibrium Framework

Tanumoy Seth PhD Scholar, University of Calcutta, Kolkata, West Bengal
Kausik Gupta Professor, University of Calcutta, Kolkata, West Bengal

This paper constructs a multi-sector general equilibrium model consisting of agriculture, manufacturing, service, and skill formation sectors to analyse the impacts of tariff liberalisation and foreign capital mobility on labour quality. In our model, we have considered that unskilled labour goes through a process of skill formation induced by investment in capital. Admission to the process involves reaching an admissible level of quality. Until the quality at the threshold is attained, low-skilled workers pay a waiting cost prior to entry into high-skilled jobs. Labour quality is considered an endogenous variable, changing through sectoral production structures interacting with capital allocation.

The analysis shows that tariff liberalisation improves the quality of labour and encourages service sector growth, while at the same time contributing to manufacturing output contraction. In contrast to widely held views, international capital mobility, far from the expected conventional impact, encourages closure of the service sector and stimulates growth in the manufacturing sector. This result is on account of capital reallocation dynamics and competition in sectors. In addition, the inflow of international capital increases labour quality to a point of saturation, after which further flows have declining marginal effects. The non-linear relationship is consistent with the equilibrium condition imposed by the world rate of return on capital.

The model thus harmonises sectoral changes and labour quality effects in a single theoretical context, generating new insights into the interaction among trade policy, capital flows, and skill dynamics in the developing world. Implications are that although tariff liberalisation can both enhance human capital quality and service sector performance simultaneously, unrestricted capital mobility is likely to threaten the viability of the service sector even as it first raises labour quality. These results have significant policy design implications, especially for developing nations aiming to reconcile trade openness, capital flows, and sustained improvements in labour quality.

From Algorithms to Equity: Building Decent Work Alternatives in Ride-Hailing Platforms

Aradhna Aggarwal Senior Advisor Trade, Technology and Skills Unit, National Council of Applied Economic Research, New Delhi, International Consultant on Trade and Investment

The global ride-hailing sector has been dominated by profit-driven platforms such as Uber, Ola, and Bolt, whose business models often erode driver earnings, weaken labour rights, and create market dependencies. In response, ethical and cooperative ride-hailing platforms have emerged, aiming to redistribute value more equitably between drivers and passengers, while upholding transparency and worker dignity.

This paper evaluates emerging alternatives to dominant commercial ride-hailing models that prioritise driver ownership, equitable value distribution, and local governance. Drawing on global case studies, it examines the governance structures, technological capabilities, financial models, market positioning strategies that underpin these alternatives, and their performance. The paper has selected five ride-hailing models rooted in cooperative principles in five different geographies: Taxi cooperative (US), Alberta (Canada), Taxiapp (London), Drive-Cardiff cooperative (Wales). and Cotabo (Italy, EU); and one hybrid ethical model: Namma Yatri operational in India based on Open Network for Digital Commerce (ONDC), which has introduced a groundbreaking public digital infrastructure to democratise access to mobility services. The objective is to offer insight into whether more equitable, democratic, and sustainable platform arrangements are feasible in one of the most capital-intensive and technologically advanced sectors of the gig economy.

The analysis reveals that while cooperative initiatives in ride-hailing embody strong democratic principles, their long-term viability is often constrained by limited access to capital, technological gaps, and regulatory barriers. The analysis emphasises that democratic governance alone is insufficient—competitive capability and innovation are equally essential. It observes that the hybrid model that combines technological sophistication with open-network, driver-first principles can scale more easily than cooperatives, while preserving decent work standards also. Such models, when supported through government facilitation—via access to digital infrastructure, integration with public transport, and targeted incentives—can create healthy market competition and reduce monopolistic tendencies.

By synthesising lessons from diverse case studies, the study offers a three dimensional actionable policy recommendations for creating an enabling ecosystem in which alternative ride-hailing platforms can thrive contributing to inclusive urban mobility systems and equitable economic participation in the platform economy. These are: (i) provide support to community-based, driver-owned cooperatives that operate in specific cities, rural areas, or niche markets; (ii) provide support to ethical Hybrid Platforms (e.g., Namma Yatri) that combine competitiveness and agility with decent work principles; and (iii) regulate dominant ride hailing platforms such as Uber.

The study has important implications for Sahkar Taxi, a multi-state cooperative to be launched in December 2025. The year 2025 being declared the International Year of Cooperatives makes this study particularly relevant and important.

TECHNICAL SESSION **2.3**

Life After Life: Exploring the Future of Work in Bangladesh through Foresight Approaches

Debapriya Bhattacharya Distinguished Fellow, Centre for Policy Dialogue (CPD), Dhaka, Bangladesh

Towfiqul Islam Khan Additional Research Director, Centre for Policy Dialogue (CPD), Dhaka, Bangladesh

Mamtajul Jannat Sr. Research Associate, Centre for Policy Dialogue (CPD), Dhaka, Bangladesh

Najeeba Mohammed Altaf Senior Research Associate, Centre for Policy Dialogue (CPD), Dhaka, Bangladesh

Global projections indicate that millions of workers may be compelled to shift occupations by 2030, yet the future of work remains least understood in the Global South, particularly in graduating Least Developed Countries (LDCs) such as Bangladesh. Poised to graduate from LDC status in 2026, Bangladesh faces a labour market dominated by informality (~90%), limited institutional capacity, and persistent exclusion of youth, women, and persons with disabilities. These vulnerabilities are compounded by political transition and global economic volatility. Reliance on outdated labour statistics further constrains the ability to anticipate long-term labour market trajectories.

This study applies a foresight approach to explore plausible employment futures for Bangladesh to 2035. The methodology combines horizon scanning of global and national signals of change, stakeholder mapping, and expert consultations with policymakers, industry leaders, academics, and unions. A Delphi-based multi-stakeholder workshop was convened to validate and refine an initial set of drivers of change. Through iterative ranking across three criteria - criticality, relevance, and uncertainty — a consolidated set of 14 global and 13 national drivers was produced. From this process, two drivers emerged as both highly critical and uncertain: expansion of the digital economy (global) and shifting social aspirations and work values (national). These were selected as the axes of a 2×2 matrix, generating four alternative employment futures. Focus group discussions with youth, women, and persons with disabilities, alongside a policy uptake meeting with government and civil society actors, are planned to further validate and translate findings into policy pathways. Preliminary results suggest that jobs in Bangladesh are more likely to transform than disappear. For instance, while manufacturing output grew by 15% between 2013–2023, sectoral employment fell by

13%, with sharper declines for women and youth. Weak signals, such as youth falling back into agriculture and widening digital divides, expose vulnerabilities in structural transformation.

The study demonstrates how foresight can generate robust insights in data-constrained contexts, integrate marginalised voices into scenario development, and provide a framework for policy preparedness in graduating LDCs. Shifting aspirations, particularly among young people and women, signal demand for flexibility, dignity, and equity, while digital divides risk reinforcing exclusion. From these insights, early policy directions include aligning skills with evolving aspirations, investing in digital readiness, embedding gender and disability inclusion, preparing industries for post-graduation trade shocks, and integrating green skills into employment strategies.

Rural Non-Farm Employment and its Impact on Consumption Expenditure in India

Swati Raju Professor, Mumbai University, Mumbai, Maharashtra

Riya Vaidya Master's Student, University of Mumbai, Mumbai, Maharashtra

The predominance of the agriculture and allied sectors in India's economy is evident from the large employment dependence on this sector amongst the rural workforce albeit its small share in overall Gross Value Added (GVA). Over the period 2017-18 to 2023-24, the employment provided by this sector has been 59.54% while its share in overall GVA has hovered around 14-15%. Consequently, 40.46% of rural employment has been in the non-farm sector and this share has remained constant over these years.

Rural non-farm employment refers to employment in economic activities excluding the agriculture and allied activities sector in rural areas. Non-farm activities represent secondary and tertiary sector activities. Hence, the non-farm sector in the paper represents all industry sections under NIC 2008 excluding Section A. A gender decomposition of non-farm employment highlights the increase in the percentage of rural males (5.52 percentage points) and a decline in rural female employment (3.7 percentage points), and a significant widening of the gender gap by 9.22 percentage points in the non-farm sectors.

The paper seeks to evaluate the impact of non-farm employment on consumption expenditure in rural households. This cross-sectional analysis is based on unit level data from the Household Consumption Expenditure Survey (HCES), 2023-24, which covers a total of 141,061 rural households, of which 70,780 (50.18%) and 70,281 (49.82%) are farm and non-farm households, respectively. The effect of rural non-farm employment (RNFE) on household monthly per capita expenditure (MPCE) has been estimated using the Propensity Score Matching (PSM) and the disparities in consumption expenditure between farm and non-farm households have been analysed using the Blinder-Oaxaca decomposition. The nearest neighbourhood and radius caliper matching methods have been used for the PSM and the

covariates considered are gender, land ownership, household size, age, education, social group, cooking source, and lighting source.

The results of the PSM for the average treatment effect of the treated group (ATT) after matching the covariates tell us that after controlling for household and demographic features MPCE of non-farm households was on an average higher by â,¹887.82 compared to farm households. The radius caliper approach (caliper of 0.05) and a matching with a nearest 1 neighbour also showed a similar outome in MPCE, whereas when a non-farm household is matched to 5 nearest farm households then the MPCE of the non-farm household was higher at â,¹1041.26. The PSM estimates generated using a logit model indicate age, size of the household, gender, education, land ownership, and social groups to be significant factors in households adopting non-farm activities. The results of the Blinder-Oaxaca decomposition, using the same covariates as in the PSM model, reinforce the higher mean MPCE of rural households in non–farm employment (â,¹13,646.05) over households engaged in farm activities (â,¹12,014.52) by â,¹1631.53. The results indicated that the endowment effects for an increase in MPCE of farm households if they possessed the same characteristics of households in non-farm employment would be by â,¹629.12. The unexplained or discrimination effects would lead to a change in the MPCE of farm households when applying the covariates of households in non-farm households — an increase of â,¹1126.6, and the interaction effects are marginal (â,¹124.2) in favour of farm households.

The paper thus concludes that non-farm households enjoy have higher MPCE and indirectly infer higher incomes and hence, there are positive benefits of non-farm diversification in raising rural incomes.

The Stranded Labour: Educational Variability and Employability in India

D Tripati Rao Professor, Indian Institute of Management Lucknow, Lucknow, Uttar Pradesh

Rishu Kumar Master's Student, Indian Institute of Management Lucknow, Lucknow, Uttar Pradesh

We investigate the determinants of youth un(der)employment across India. Our main emphasis is on the multiple factors that result in state-wise variation in educational levels and employability at the regional (state) level. Our main objective is to understand the state-wise variation in educational levels and employability, as well as to understand the set of socioeconomic factors that determine youth unemployment across regions/states in India. Our analysis is based on the unit-level data from the Periodic Labour Force Survey (PLFS), NSO, UDISE, ASHIE annual reports on higher education and CMS-Telecom Survey from NSO. We find that a large variation among states in access to education (school and higher). This variation expands for females, marginalised groups, and for the rural population. We also find that in most of the region/states similar socioeconomic factors impact education and employability. The labour force and workforce and the type of employability, that is, regular, casual, and self-

employed, is highly influenced by education and training, caste, religion and social groups, gender, income level, rural and urban area. However, the degree of impact of socioeconomic factors varies across regions/states. In most urbanised and literate regions/states, the social setting and caste is of relatively lesser impediment on access to employment, and hence employability is contingent on the level of education, skills and training. With the same level of education, work force participation (WPR) in rural areas is higher than the urban areas, and therefore the incidence of unemployment is relatively higher in urban regions. Besides, the per capita physical and digital infrastructure also impacts education level as well as employability. However, we nuance our findings in stating that the impact on the states is contingent on its rooted socio-political histography. And hence, the level and quality of education and so as the nature of employment differ across the region and states.

Special Economic Zones, Employment, and Migration: Evidence from Sri City SEZ

Malini L Tantri Associate Professor, Institute for Social and Economic Change, Bengaluru, Karnataka

The worldwide proliferation of Special Economic Zones (SEZs) was mainly due to its promise of economic growth through employment generation. As identified in the global literature, much of the increase in employment within SEZs are contributed by migrants from countryside – as rural people are considered more hardworking and submissive. Further, it significantly increased female workforce participation/employment (74% in Philippines; 70% in Korea; and 60% in Mexico) particularly in low skill but high paid jobs. As a result of high salaries, there is always higher exploitation in terms of long working hours and bad working conditions.

Similar to the global literature, Indian literature too reiterates enormous employment opportunities across the country. As per one estimation it has increased from 3,36,235 persons in 2007-08 and to 22,33,780 in 2019. Similarly, 240 operational SEZs had created 2 million jobs as of 31 December 2019. This expansion of industrial corridors through SEZs in India has created new migratory patterns and reshaped labour dynamics. This however has not received due attention in the academic literature.

It is in this context, this paper taking the case of Sri City SEZ explores the emerging migration pattern and its socioeconomic characteristics of the migrant cohort. To probe this in detail, the qualitative study was conducted in and around Sri City SEZ between May-July, 2025 through a structured questionnaire. The analysis thereby helps us to argue that the profile of migrants reveals complex intersections of caste, education, gender, and family structures. Migration also transforms their employment history: most move from experiences of informal, insecure jobs into relatively more formalised work in SEZs, though challenges like contractual insecurity, long work hours, and limited protections continued. Economically, migration enables modest but significant improvements. Migration therefore represents a process of incremental progress

empowering yet constrained where workers negotiate between rural deprivation, industrial opportunity, and the social costs of mobility.

Labour Participation and Entry-Exit of Urban Females: Insights from the India Human Development Survey Panel Data

Savita Kulkarni Assistant Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra

This paper studies the factors influencing employment choices of females residing in urban India. Our findings are based on the India Human Development Survey (IHDS) panel survey of 15,620 women for the year 2004-05 and 2011-12. We apply the random effect panel logistic regression model. We also try to apply the entry-exit model to estimate the probability of females entering, continuing, and exiting the labour force in urban regions. We examine three-way interactions between levels of education, age, income, assets holdings with female labour force outcomes. Relatively less attention has been paid to the understanding of the dynamics of urban female labour force participation rate (FLFPR). We observe the strong prevalence of income effect for women belonging to the poorest families. Female belonging to lower income groups, oppressed caste groups are more likely to work. The effect tapers off for middle income ranges.

Our findings are consistent with the established body of the literature on determinants of the FLFPR. We could also confirm the existence of the motherhood penalty, marriage effect, and higher burden of family responsibilities on women in urban households, and these act as major disablers for women to take up paid jobs. The higher probability of quitting the labour market is associated with lower level of education and asset holdings. Absence of decision making power with females regarding major purchases or daily cooking also suggests their lower stay in the labour market. These findings challenge the sociological view that urbanisation processes can promote individualism, modern values over gender norms. The findings suggest that the public amenities which can help women save their time and energy from their existing responsibilities can be promising short-term policy measures. At the same time, the significance of the behavioural interventions and social reforms to weaken the regressive gender norms cannot be underscored even in urban India.

Lack of Productive Employment: Colonial Shadows and Neoliberal Policies

Christoph Scherrer Professor, Kassel University, Kassel, Germany

There is a lack of productive, formal employment; more than half of the global working population is only precariously employed. In view of the success of the early industrialised

countries and a few economically catching-up countries (especially the PR China), the question arises as to the exact economic, social, and political reasons why the productive absorption of the working-age population is insufficient in the rather heterogeneous mass of the capitalist periphery compared to these successful countries. What specifically distinguishes the countries of the capitalist periphery from those that previously achieved a high level of formal employment?

To answer this question, we use a historical-materialist approach that takes into account the respective geopolitical contexts and the state of the productive forces of early industrialisation and later industrialisation efforts. Our theses are therefore that: (1) the colonial period casts a long shadow into the present, (2) the significantly greater productivity gap between industry and agriculture compared to the early phase of industrialisation inhibits the absorption of labour from the countryside into industry, (3) the considerably faster growth of the working population (medical progress and a narrower migration valve) exceeds the productive employment opportunities, and (4) the early capitalist centres have enforced global economic rules that make industrial catch-up more difficult.

Following the work of Gavin Kitching on the problem of absorption of the population released from agriculture, we therefore compare the conditions in the early European industrialised countries with those in today's post-colonial countries. To illustrate this, we selected two post-colonial countries that were both subject to the British Empire, but which differ greatly in terms of their initial situation, the forms of colonial exploitation and their size: Ghana and India.

This analysis adds historical materialist insights to the literature on economic informality, emphasising not only the structure of global asymmetric dependencies but also the agency of early industrialisers in limiting the possibilities of catching-up economies. The paper begins with the violent enforcement of the international division of labour, with special consideration of the consequences of the enslavement of people in Africa. This is followed by a comparison of the capacity to absorb labour in the industrialisation process of the imperial powers and the colonies that later became sovereign. It concludes with the post-imperial measures that restricted the catch-up economic development.

TECHNICAL SESSION 2.4

The Gender Wage Divide: What does India's Recent Labour Market Survey Convey?

Samparna Mittra Master's Student, Indian Statistical Institute, Kolkata, West Bengal, 2nd year, MS in Quantitative Economics, ISI Kolkata

Raj Rajesh Director, Reserve Bank of India, Kolkata, West Bengal

Narrower gender gaps have been reported to be significantly associated with salutary development outcomes. In this regard, a nuanced understanding of gender wage gaps is important for policy makers as distributional consequences of fiscal and monetary policy measures may further exacerbate the gender divide, which is significant in the Indian case. India's aspirations of a developed country status by 2047 hinges, inter alia, in bridging this divide.

Using the official primary labour survey data, we find empirical evidence of a pervasive gender wage gap in India, with conspicuous heterogeneity in labour market outcomes for females and males across the wage distribution. Novelty of this study in bridging the literature gap lies in its use of quantile decomposition, which is non-parametric and provides more robust estimates and dynamics of the gender pay gap. Our estimates suggest that human capital differences play a minor, albeit significant, role in causing the gender wage gap; but the majority is contributed by the discriminatory component. Our analysis across quantiles in the wage distribution provide confirmation of the existence of 'sticky floor' in the Indian labour market for regular-salaried females. The disaggregated analysis undertaken in this study, with separate emphasis on decomposing the gender wage gap at the mean and other quantiles of the wage distribution, generate rich and novel insights, which is topical for policymakers.

Wage Differentials among the Informal Workforce of In-Migrants in Assam: An Empirical Investigation

Gayatri Gogoi Assistant Professor, Rangachahi College, Majuli, Assam, PhD Research Scholar

This study presents a comprehensive empirical examination of wage disparities among informal sector workers in Assam, emphasising the differences between in-migrants and

natives, as well as among in-migrants from different states. This research utilises primary survey data from in-migrant and native workers in major districts of Assam, employing Oaxaca-Blinder decomposition and Propensity Score Matching (PSM) to analyse the determinants and sources of wage differentials.

Research indicates that the wage differentials observed between natives and in-migrants, as well as among in-migrants from various states, are primarily accounted for by measurable factors including education, skill level, proficiency in the local language, caste, and age distribution. The Oaxaca-Blinder decomposition reveals that most wage disparities stem from variations in endowments rather than from discrimination or differing returns to characteristics. Propensity Score Matching results support these findings, indicating that wage disparities between groups become statistically insignificant after controlling for key covariates. The analysis challenges conventional views on migrant wage suppression, revealing that in-migrants, particularly those with advanced education and skills, frequently earn higher wages than native workers in both skilled and unskilled jobs. Wage differentials among in-migrants from Bihar and other states are negligible and statistically insignificant after controlling for observable factors.

Regression analysis underscores the importance of human capital, indicating that education and skill levels are significant positive predictors of wages. Conversely, affiliation with a disadvantaged caste (Scheduled caste/Scheduled tribe) or insufficient local language support adversely affects earnings. The research indicates minimal evidence of discrimination or unexplained wage disparities, highlighting the importance of enhancing access to education, vocational training, and language proficiency to mitigate wage inequality.

Policy recommendations highlight the necessity for focused interventions aimed at improving educational outcomes and skill development for marginalised populations in Assam's informal sector. Facilitating social integration and ensuring equitable access to labour market opportunities are essential for reducing wage disparities and promoting inclusive economic growth. Future research should investigate the influence of unobserved factors and region-specific labour market dynamics to enhance the understanding of wage formation among internal migrants in India.

Like Father Like Son? Intergenerational Occupational Mobility among Schedule Tribes in India (1993-2023)

Shibthakur Hembram Assistant Professor, Presidency University, Kolkata, West Bengal
Subrata Mukherjee Professor, Mumbai School of Economics and Public Policy, Mumbai, Maharashtra
Bidhan Kanti Das Associate Professor, Institute of Development Studies, Kolkata, Kolkata, West Bengal

This article analyses intergenerational occupational mobility of India's Scheduled Tribes (STs) during three decades relative to the overall population (General and Other Backward Class

[OBC] groups). Applying nationally representative data from National Sample Survey Office (NSSO) rounds (1993-94, 2004-05, 2011-12) and Periodic Labour Force Survey (PLFS, 2022–23), the paper computes father-son occupational transition matrices to identify persistence, upward, and downward mobility across occupational categories ranked by income security and stability. Evidence of strong occupational choice persistence, both between and within generations, particularly in ST households, exhibits lesser upward mobility and relatively higher downward mobility. In 1993–94 and 2004–05, ST sons of more than 70% replicated their fathers' occupation, mainly in self-employment and casual work, evidencing structural constraints and limited entry into stable wage employment. The 2011-12 round also documented more mobility, but with high downward mobility, with almost one-third of ST sons drifting to unpaid or insecure work. In 2022–23, persistence remained the rule, though some upward movement from casual work and unpaid domestic work to higher occupational categories was seen, reflecting promising but uneven opportunities. In relative terms, the General and OBC groups have greater stability in maintaining high-status occupations, reflecting persistent group-based differentials.

The results suggest that despite the economic progress and poverty reduction in India during the last decades, STs are still structurally disadvantaged in accessing secure and mobile job opportunities. Educational attainment, parental occupational experience, and broader socioeconomic inequalities decisively shape intergenerational mobility outcomes. The persistence of risks of downward mobility from salaried to insecure forms of employment among STs also reflects their vulnerability. The broader import of these observations is that rapid economic growth and structural transformation of India's labour market have not been enough by themselves to equalise opportunities between social groups. The study highlights the need for balanced policies, the necessity of sustained state intervention, particularly in education, skill formation, and inclusive labour market policies for marginalised groups.

Outsourced Labour in Government Organisations: Practices and Prospects

Kamlendra Prasad IPS (Retd.) Former Director, Bureau of Police Research and Development, New Delhi

Human resources are by far the most crucial input in any enterprise or organization, whether in economic, political, social or cultural sector. The same is true in government organisations as well. No amount of automation or deployment of AI is going to reduce the importance of human resources. Government organizations started engaging along with their regular employees, what is called 'contract labour' or 'outsourced labor' as a cost cutting measure. It was initially limited to low skill jobs and positions but has over the time extended to include even complex and skilled positions also. In many Government organisations the outsourced persons work along with what is called regular 'civil servants' being sometimes

interchangeable but they neither have the status of 'civil servant' nor enjoy comparable perks, though a government is expected to be 'model employer'. Exploitation of labour appears implicit in this form of engagement of manpower. What started in Government Organisations as an ad hoc method for getting manpower faster than the traditional modes of recruitment based on principles of 'equality of opportunity' and 'affirmative actions' has in essence ended up in denying/bypassing these constitutional guarantees in public employment without there being a direct evidence of this alternative manpower being more productive. Continued engagement of such manpower is in a way admission of failure of 'employers' to 'manage' their manpower. It is not difficult to conclude that the current practices are exploitative, demeaning and indicative of a dehumanizing practice. Perhaps a stage has come to formally acknowledge the shortcomings of methods and policies in engaging contract / outsource manpower and reducing the shortcomings, if not removing them all together. This paper examines the mode of recruitment, manner of compensation and scheme of 'reward' and 'punishment' for this parallel category of manpower used by governments alongside its regular manpower. An attempt has been made to suggest measures for improving quality of the manpower and rewarding better performers because human beings are more than just 'numbers'.

Income Inequality and Quality-Adjusted Human Capital Inequality: Evidence from Panel Study

Kumari Neha Jha PhD Scholar, Indian Institute of Technology, Roorkee, Uttarakhand
D Bharat Assistant Professor, Indian Institute of Technology, Roorkee, Uttarakhand

High levels of income inequality continue to persist in both developed and developing nations, posing serious challenges to economic stability, social cohesion, and individual opportunity. A major underlying factor behind this persistent disparity is human capital inequality: differences in access to and quality of education and skills that form the foundation of human capital formation. Addressing unequal access to quality education is therefore critical in narrowing income gaps and promoting inclusive growth.

This paper examines the relationship between the quality of education measured through a range of input and output indicators and the distribution of income. In addition to traditional measures of education such as average years of schooling, the analysis incorporates the quality dimension to assess its impact on the human capital Gini coefficient and, in turn, on the income Gini coefficient.

The findings indicate that including quality measures significantly increases the explanatory power of human capital distribution in predicting income inequality for the overall sample. The results suggest that how education is distributed across a population is at least as important as the overall average level of education attained. A skewed distribution

of education, even in the presence of higher average attainment, can widen the wage divide and exacerbate income inequality. Conversely, equitable access to quality education has a stronger equalising effect on incomes than schooling quantity alone. To strengthen causal inference, the study addresses potential endogeneity by using the lagged human capital Gini coefficient as an instrumental variable, serving as a proxy for the historical distribution of education and its long-term impact on current income distribution. Incorporating control variables such as gross domestic product (GDP) per capita and trade openness improves the robustness and predictability of the model for both the quality and quantity dimensions of education. Moreover, the interaction between quality and quantity is found to be significant, with the nature of the relationship varying according to a country's stage of economic development. The results underscore the need for policies that not only expand educational access but also improve the quality of education across all social groups to effectively reduce income inequality.

Amplifying Labour Economics Projections through Artificial Intelligence-based Birth Rate Forecasting: Evidence from India

Minakshi Mishra Assistant Professor, Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh

Anuj Kumar Assistant Professor, Autonomous State Medical College, Firozabad, Uttar Pradesh

Tufleuddin Biswas Assistant Professor, Symbiosis Statistical Institute, Symbiosis International (Deemed University), Pune, Maharashtra

Akshat Srivastava PhD Scholar, Shiv Nadar Institution of Eminence, Greater Noida, Uttar Pradesh

Salonee Mittal PhD Scholar, Indraprastha Institute of Information and Technology, New Delhi

Accurate birth rate forecasts are essential not only for healthcare planning but also for anticipating future labour force dynamics and demographic transitions in India. Reliable projections support evidence-based labour market policies, skill development strategies, and economic planning, especially in a country where demographic shifts strongly influence employment patterns and social security systems. This study compares the performance of recurrent neural network time series techniques, specifically Nonlinear Autoregressive (NAR) and Nonlinear Autoregressive with Exogenous Input (NARX) models, with conventional time series methods (Moving Average, Holt's Linear Trend Model, Autoregressive, and Autoregressive Integrated Moving Average: ARIMA) for forecasting birth rates in India from 1950 to 2023. Given the non-linear pattern of the time series data, NAR and NARX models with 10 hidden neurons and 1:2 delay times were developed using the Levenberg-Marquardt training algorithm.

Results showed that NAR and NARX models outperform conventional methods, yielding a higher coefficient of determination (R-squared = 0.99997 and 0.99998, respectively) and lower

error measures (Mean square error: MSE, Root mean square error: RMSE, Mean absolute error: MAE, and Mean absolute percentage error: MAPE). By demonstrating the superiority of recurrent neural network (RNN) models over conventional time series approaches, this study contributes to labour economics by providing a robust methodological framework for predicting demographic indicators critical to labour supply and policy design. The adaptability of NAR and NARX models in capturing intricate relationships and patterns makes them valuable tools for analysing a broad range of real-world time series datasets, particularly in fields where traditional linear models may fall short. While the methodological charities extend many fields of time-dependent data, the implications for labour economics are especially notable. Thus, the present study is not only a statistical framework for studying Machine Learning algorithms but also solid evidence for the social science researcher, particularly demographers, labour economists, and policy makers, for thoughtful demographic predictions and forecasting leading to labour policy in economics.

Qualitative Employment inequality in Indian Labour Market: An Alternative Measurement Approach

Sumita Biswas PhD Scholar, University of Calcutta, Kolkata, West Bengal
Panchanan Das Professor, University of Calcutta, Kolkata, West Bengal

Inequality with respect to income, earnings, and consumption has often been discussed and studied. In this study, we essentially provide an empirical exercise in exploring inequality in the Indian labour market. This study measures and analyses employment inequality in Indian labour market using Periodic Labour Force Survey (PLFS) data, for a categorical variable, employment using parametric approach. It comprehensively examines the structure of the gap in employment inequality across different dimensions (gender, education level, social caste, religion, and household types) among total workforce (15-65 years) engaged into different wage employment (viz., regular salaried, and casual earners) in the rural and urban economy in Indian labour market using the PLFS data for 2018-19 and 2023-24 for wage workers.

We define employment inequality as differences in job quality in terms of job tenure, skill level, and social security benefits among wage workers. Job category is a qualitative variable and we express it in two separate categories according to job characteristics. This study computes inequality for the qualitative variable 'employment' using a novel approach, thereby making a significant contribution to the existing literature. Employment inequality is measured using Theil's T-index indices based on counterfactual distribution. This study observes the impact of COVID-19 on the Indian labour market in terms of employment.

Empirical findings observe that women workers outperform men among different job quality. Summary statistics of the study suggests that the share of the workforce in better

category jobs is significantly higher among women than among men. The result further depicts that the share of regular salaried workers among women increased, it may not be an indicator for better employment opportunities for women. This might highlight that more female workers are in regular-pay jobs without written contract and social securities. The study further examines the presence of employment inequality across gender, sector, education level, and social groups of workers. A comprehensive approach that combines education, social protection, legal reform, and targeted job creation is critical to achieving gender equality in the labour market and ensuring inclusive economic growth in India.

TECHNICAL SESSION 2.5

Determinants and Dynamics of Educational Mismatch among Women Workers in India: An Intersectional Analysis

Bidisha Mondal Senior Fellow, IWWAGE-An initiative of LEAD at Krea University, New Delhi

Aneek Chowdhury Research Associate, IWWAGE, New Delhi

The female labour force participation rate (FLFPR) in India has increased from 23% in 2017-18 to 41% in 2023-24, often propelled by an increase in women's engagement in non-remunerative/ under-remunerative work in agricultural activities in rural areas. Within this context, a critical yet underexplored issue is the phenomenon of educational mismatch that is, whether the educational attainment matches with the requirements of the job or not. This mismatch, particularly overeducation, causes skills to remain underutilised, leads to significant loss of human capital and potential productivity. The unavailability of formal employment in the non-agricultural sector often forces women to accept jobs in the low-paying, informal sector where their skills remain underutilised. Also, social norms often relegating women to the status of secondary income-earners and primary care-givers in the household, restricts their job search geographically and sectorally. Women, often prioritising the flexibility aspect of the job, which allows them to continue the job alongside the domestic responsibilities, takes up home-based work or informal sector work with flexible schedule but not appropriate to their skill/education level. Additionally, since women exhibit lower mobility due to safety concerns, domestic responsibilities etc., the local-level employment opportunities often determine whether they are obtaining suitable employment or not. The gender stereotyping also leads women to certain types of female-dominated sectors and occupations, leading to mismatch/their skills remain underutilised. Studies have also observed that women, particularly belonging to the marginalised communities and in rural areas, do face a higher risk of being overqualified in their current job. However, there exist a gap in quantitative evidence of the educational mismatch among women workers in their current jobs and how the trend has moved over the recent years.

Against this background, this paper attempts to investigate the dynamics of educational mismatch among women workers in India over the period of 2017-18 to 2023-24, adopting an intersectional framework with the following specific objectives: i) Understand the temporal trend of educational mismatch among women workers across the key demographic and

socioeconomic strata including age-cohorts (15-24 years, 25-34 years, 35-60 years), across different social categories, rural and urban women, women with different levels of education and skills, women with and without care responsibilities, married and unmarried women, women across different states with different demand-side employment opportunities, and women employed across different sectors and occupations. ii) Confirming the impact of the supply-side (e.g., age, care responsibilities, marital status etc,) and demand-side factors like availability of local-level employment opportunities on women's educational mismatch in their current job.

The study employs a multi-faceted methodology to identify and explore the phenomenon of educational mismatch particularly among women workers. To identify the educational mismatch, we have started with a normative approach (ILO) where the educational mismatch is defined by comparing the workers' formal educational attainment against the educational requirements established for their occupation. The educational classification is based on the International Standard Classification of Education (ISCED-11) as designed by the UNESCO, whereas the educational requirements are set out in the International Standard Classification of Occupations (ISCO). Based on whether the level of education matches to the educational requirements corresponding to that occupational group or not, the workers are categorised as matched, overeducated, and the undereducated. The proportion of overeducated women are estimated for different cohorts of women. The multivariate regression analysis is done to identify the underlying drivers of the educational mismatch and isolate the impact of various demand-side and supply-side factors on the likelihood of the individuals being overqualified for their jobs. The dependent variable in the multivariate analysis is the individual's mismatch status, with the independent variables being age, social category, religion, marital status, presence of children, education level, geographical location etc.

The study suggests policy interventions which move beyond increasing FLFPR, and focus on enhancing the quality of women's employment, and address both supply-side and demand-side constraints to reduce the mismatch. Also, the intersectional framework in the paper is vital for policymakers as it underscores how the experience of underutilised human capital is shaped by the interplay of various factors like social identity, geography, and other demographic factors.

Vocational Education and Labour Market Dynamics in India: Insights from Periodic Labour Force Survey 2023–24

Abhijit Ghosh Assistant Professor, Mahatma Gandhi College, Purulia, West Bengal

Anjan Raychoudhury Assistant Professor, Durgapur Govt. College, Durgapur, West Bengal

India's labour market is characterised by pervasive informality, structural inequality, and persistent gender and social disparities. In this context, vocational education and training

(VET) is frequently promoted as a means to enhance employability and facilitate smoother transitions from school to work. Yet the question remains whether VET in India functions as a genuine safety net that protects individuals from unemployment and low-quality jobs, or whether it reinforces existing stratification through tracking.

Using unit-level data from the Periodic Labour Force Survey (PLFS 2023–24), this study critically examines the theoretical and empirical validity of these competing perspectives. The analysis focuses on individuals aged 25–59 years and employs descriptive statistics, the Mincerian earnings function estimated through the Heckman two-stage method, and a binary logistic regression.

The findings reveal a paradoxical scenario. On one hand, formally trained workers—when employed—earn a significant wage premium compared to untrained and informally trained workers. High occupational matching in technologically intensive fields such as IT-ITeS, healthcare, and office-related work further demonstrates the potential effectiveness of well-aligned VET programmes. These outcomes provide partial support for the Safety Net Hypothesis. On the other hand, formal VET coverage remains extremely low—below 7% even among those completing higher secondary education. Unemployment rates are disproportionately high among formally trained individuals, particularly women and graduates, indicating weak labour market absorption. The distribution of VET is also socially patterned, with disadvantaged groups overrepresented in lower-quality training streams, reflecting the dynamics predicted by the Tracking Hypothesis. Econometric results reinforce these dualities: while higher levels of formal education combined with vocational training significantly improve earnings and employment likelihood, training yields positive returns mainly when followed after advanced schooling and when workers are matched to relevant occupations. Overall, VET in India delivers selective benefits but falls short of functioning as an inclusive and robust safety net.

The study concludes that systemic reforms—expanding equitable access, improving institutional quality, enhancing industry linkages, and addressing gender and social barriers—are essential for transforming VET into a transformative pathway for inclusive labour market outcomes.

Returns to Education in Kerala's Dual Labour Markets

Mariappan R Assistant Professor, University of Madras, Chennai, Tamil Nadu

Returns to Education in Kerala's Dual Labour Markets R. Mariappan, Faculty & A.S. Nandanaa, Alumna Department of Econometrics, University of Madras, Tamil Nadu * Corresponding authors: drrmmetrics@mail.com ABSTRACT Kerala is one of the southwestern coastal states of India and most progressive state in terms of social welfare and quality of life. According to the Census of India 2011, the population of Kerala was 3.34 crore, or 2.76 per cent of

India's population with 16.03 million males (48 percent) and 17.38 million females (52 percent), resulting in a sex ratio of 1084 females per 1000 males. This state has India's highest literacy rate of 94 percent in 2011 with male literacy rate 96.11 percent and the female literacy rate 92.07 percent. The literacy rate for women in Kerala is one of the highest in all of Asia. This paper empirically evaluated the returns to education for workers in both rural and urban labour markets in Kerala by applying econometric models. The results showed that the effects of education and experience were significantly positive on the log of hourly wages in both rural and urban markets. The estimated results indicated that an individual with higher education earned 52 percent more than an individual who was illiterate or had below secondary schooling. The results of the earnings function showed that there was a substantial earnings difference between males and females. The estimated results indicated that the rates of return for higher secondary and graduates were higher in the urban market. Comparing the estimated wage results between rural and urban labour market workers, the Heckman results indicated that the returns to an additional year of an urban market worker's education were higher than that of a rural market worker at the graduate level. The returns to education based on the Quantile regression for rural and urban market workers showed that the rates of return to education were higher for higher levels of education and lower for lower levels of education. The rates of return within educational levels differed across the rural and market wage distribution. To address disparities in education quality and wage compensation between rural and urban labour markets, the government should implement policies aimed at enhancing rural education and ensuring equitable wage rewards for educational qualifications across Kerala regions. Keywords: Human capital, Quantile regression, Returns to education, Wage differential, Kerala JEL Classification: C13, C31, I21, I26, J24, J31

Kerala is one of the southwestern coastal states of India and most progressive state in terms of social welfare and quality of life. According to the Census of India 2011, the population of Kerala was 3.34 crore, or 2.76% of India's population with 16.03 million males (48%) and 17.38 million females (52%), resulting in a sex ratio of 1084 females per 1000 males. This state has India's highest literacy rate of 94.0% in 2011 with male literacy rate 96.11% and the female literacy rate 92.07%. The literacy rate for women in Kerala is one of the highest in all of Asia.

This paper empirically evaluated the returns to education for workers in both rural and urban labour markets in Kerala by applying econometric models. The results showed that the effects of education and experience were significantly positive on the log of hourly wages in both rural and urban markets. The estimated results indicated that an individual with higher education earned 52% more than an individual who was illiterate or had below secondary schooling. The results of the earnings function showed that there was a substantial earnings difference between males and females. The estimated results indicated that the rates of return for higher secondary and graduates were higher in the urban market. Comparing the estimated wage results between rural and urban labour market workers, the Heckman results indicated that the returns to an additional year of an urban market worker's education were higher than that of a rural market worker at the graduate level. The returns to education based on the Quantile regression for rural and urban market workers showed that the rates

of return to education were higher for higher levels of education and lower for lower levels of education. The rates of return within educational levels differed across the rural and market wage distribution. To address disparities in education quality and wage compensation between rural and urban labour markets, the government should implement policies aimed at enhancing rural education and ensuring equitable wage rewards for educational qualifications across Kerala regions.

Structural Transformation, Growth Trajectories, and Employment Trends in India: Assessing Static and Dynamic Transitions

Suman Rani PhD Scholar, Birla Institute of Technology and Science, Pilani, Rajasthan

Balakrushna Padhi Assistant Professor, Birla Institute of Technology and Science, Pilani, Rajasthan

India's economic trajectory over the last four decades has been marked by impressive output growth, particularly in the service sector. However, this growth has not been accompanied by a commensurate expansion in employment opportunities, raising significant concerns about the quality and inclusiveness of the country's development process. The disconnect between output and employment generation—commonly referred to as "jobless growth"—has brought into focus the weak nature of structural transformation in India, where the movement of labour across and within sectors has failed to yield expected productivity gains and employment absorption.

This study critically examines the dynamics of labour reallocation and productivity changes in India over the period 1983 to 2023–24, using the Shapley Decomposition Methodology (canonical approach). The analysis leverages unit-level data from the National Sample Survey Office (NSSO) – Employment and Unemployment Surveys (EUS) and the Periodic Labour Force Surveys (PLFS) to decompose per capita output growth into its key contributing components: productivity growth within sectors, static allocation effects (changes in employment shares across sectors), and dynamic allocation effects (reallocation of employment to more productive sectors over time). This analysis reveals a pattern of variation in employment as well as gross value added between and within the sub-sectors of India.

The result shows that productivity plays a crucial role in driving the per capita output growth, while the contribution of static and dynamic reallocation is negligible. In dynamic allocation, within-sectoral productivity plays a major role, and it reveals that the agriculture and manufacturing sectors contribute the most to the overall productivity growth, while sectors such as financial real estate and construction make only a minimal contribution. Further, it also reflects that despite the high output growth, the rate of employment is very low, indicating that the growth has not been absorbing the labour entering the market. This study indicates that the process of structural transformation remains weak in India, which underscores the need for targeted policy for the provision of decent work and economic growth.

Job Creation among Females through Increasing Employee Provident Fund Accounts: A Case Study of Pradhan Mantri Rojgar Protsahan Yojana

Antra Singh Assistant Professor, University of Delhi, New Delhi

Niharika Singh Assistant Professor, Symbiosis International University, Symbiosis School of Economics, Pune, Maharashtra

This paper examines the impact of the Pradhan Mantri Rojgar Protsahan Yojana (PMPRY) on women's participation in the labour force. With the scheme running widely, there is a need to study its impact on the participation of women in the labour force, to find out the number of women beneficiaries of the scheme, and to explore the ways of benefits. There is sufficient literature available on factors affecting Female Labour Force Participation in India, but there are scant reports available which deal with the effectiveness of the policies initiated/implemented by the government. Thus, the objective of this study is to address the challenges faced in the effective implementation of this scheme and the other non-policy-related factors that pull women back from joining the workforce.

The study used the Consumer Pyramids Household Survey (CPHS) by the Centre for Monitoring Indian Economy (CMIE) as a database for analysing variables such as education, marital status, past employment details, effective use of time, health and financial coverage provided, using multiple discriminant analysis. The detailed analysis of the above-mentioned datasets portrayed the trend in female participation in work workforce, the relationship between level of education, and the drop in women from the labour market and the reasons for the drop in female labour force participation. This paper elaborates on the government scheme from the perspective of women in the labour force and its effectiveness, as well as gaps in existing policy. The study makes an effort to understand whether women are aware of the scheme and to the extent it has been availed by women, and if not, points out the reasons for the same. The study tries to quantify the impact of key policy and non-policy factors affecting female participation in the workforce. The outcome provides the loopholes in the policies and proposes ways in which these policies can act as a pull factor to women in the labour market.

Rethinking Education-Employment Paradox in India

Ishita Mukhopadhyay Professor, University of Calcutta, Kolkata, West Bengal

Sudip Mukherjee Assistant Professor, Dinabandhu Mahavidyalaya, Bonga, West Bengal

Deboshmita Brahma Fellow, University of Calcutta, Kolkata, West Bengal

Rethinking education-employment paradox in India Ishita Mukhopadhyay, Sudip Mukherjee, Deboshmita Brahma Abstract Educational achievement has a transformative role in

employment generation. Education facilitates human capital and is directly linked to employment, production and economic growth. Microeconomic decision towards investment in education is causally related to upward socioeconomic mobility of individuals in terms of human capital. The perception of direct relation between education and income mobility has been prevalent in India. The perception of intergenerational persistence of income also is also positively related to education. There has been an observed education-employment paradox with respect to female employment in India from 2004-05 onwards. The direct transformation from classrooms to workplaces was missing for females in India. While educational enrolment for women were rising, there was a fall in female labour force participation rate. The essence of education-employment paradox for females in India clearly indicated that education was not acting as a driver for income mobility which also indicates socioeconomic mobility for females in India. This was explained by gender effects on female employment. In subsequent years. Present paper takes off from the observation that in the subsequent years in India, the education-employment paradox which was visible for females spread to the population inclusive of both males and females. The paper explores the quality of employment corresponding to education categories. The paper uses secondary data from Periodic Labour Force Survey for four consecutive years 2020-21, 2021-22, 2022-23 and 2023-24. The disaggregated structure of employment across rural and urban areas, along males and females according to education categories is explored. The quality of jobs is determined by the binary categories secure and insecure jobs. Secure jobs ensure job contract and full or partial social security benefits. The correlation between educational attainment and job security is assessed using a multinomial logit equation. It was observed that the level of education is correlated positively to job security. Education-employment paradox does not work in the same way in a macro perspective and has also a gender effect. The second research question in the paper explores the correlation between educational attainments and employment in regular, casual and self-employed categories of jobs. There are significant differences in the correlation of the various categories of education, both females and males in rural and urban areas and employability in the three categories of jobs. Emergence of educated employment in non-regular jobs also feature in the recent years of the secondary data. The explanation of the paradox which is examined at the microlevel using PLFS data cannot be based only on supply side. The paradox requires a demand explanation as the disaggregated analysis reveals positive micro effects of education on employment regarding quality of employment. However, the effect cannot be observed in a progressive sense so that education acting as a driver for income mobility or mobility in better quality of jobs can be postulated.

Curriculum Restructuring in Higher Education

Abhishek Pandey Visiting Fellow, Institute for Human Development, New Delhi

Since 2015, the University Grants Commission (UGC) of India has initiated three major curricular reform efforts in higher education: the Choice Based Credit System (CBCS) introduced in 2015, the Learning Outcomes–Based Curriculum Framework (LOCF) for Undergraduate Programmes in 2020, and the Curriculum and Credit Framework for Undergraduate Programmes (UGCF) notified in December 2022 as a follow-up to the National Education Policy (NEP) 2020. This paper offers a critical examination of these UGC-mandated curricular reforms, with particular attention to their implications for academic autonomy. It argues that the reform process significantly curtails the freedom of Boards of Studies to determine the structure, content, and pedagogical orientation of curricula. The paper underscores the potential risks posed by a highly standardised curricular framework, which may constrain intellectual plurality and inhibit the diverse modes of knowledge production and dissemination across institutions. Further, the paper contends that the strong employability-driven emphasis on skills, the conceptually ambiguous articulation of multidisciplinarity, and the hasty and top-down implementation strategy have collectively produced a fragmented and often chaotic situation at the level of practice. Many higher education institutions struggle to effectively deliver the prescribed curriculum due to persistent shortages of qualified faculty and inadequate physical and academic infrastructure. At the same time, students frequently lack the necessary academic guidance to make informed choices regarding appropriate subject combinations within the restructured framework. Against this backdrop, and while briefly engaging with broader curricular debates, the paper seeks to analyse the theoretical premises and practical challenges associated with implementing a curricular structure grounded in the philosophy of NEP 2020 and imposed through the UGCF 2022. In addition, it examines the specific difficulties involved in the design, integration, and delivery of components such as Ability Enhancement Courses, Skill Enhancement Courses, and Value-Added Courses within the undergraduate curriculum.

TECHNICAL SESSION 2.6

Bridging or Reproducing Inequalities? A Conceptual Framework for Academia–Industry Collaboration and Employment in India

Chaitanya Khandelwal Associate Fellow, Institute for Human Development, New Delhi

Ipsita Sarkar PhD Scholar, Christ University, Bengaluru, Karnataka

There has been a substantial policy and technical interest in the industry-academia collaboration (IAC) in India. Policy initiatives, specific to skill development, and government schemes have attempted to actively promote IAC, particularly to enhance the employability of graduates. Previous studies conducted in this area have largely emphasised upon institutional infrastructure reforms, skill-based training models and programme descriptions. However, there is a dearth of critical, labour-market oriented analyses that links IAC to employment outcomes, especially given the dominant informal employment landscape in India along with challenges such as the context of local labour markets or the political economy of employer incentives.

This paper examines IAC at three interconnected levels: labour process, local labour market structure, and credentialism. Primarily, we contest the narrative surrounding skills acquired equals 'employability' by emphasising the 'political economy' behind apprenticeships, internships, certification programmes, and unstable employment. The apprenticeship policy in India is aimed at addressing the skill gap and the issue of skill deprivation among employable youth, ensuring their access to employment. Nonetheless, this skill-enhancing initiative does not guarantee future job placements for apprentices. Graduates typically find positions in small, informal, and subcontracting firms. This also diminishes their ability to negotiate for fair wages, often forcing them to accept poorly paid jobs as low-cost labourers. Even though internships (regardless of whether they are paid or unpaid) may offer students valuable industry exposure, they rarely lead to permanent or stable formal employment opportunities, particularly due to the preference for informal or contractual work by many firms. This also brings in the aspect of 'credentialism'. The growing reliance on short-term certificate courses illustrates credentialism, where students accumulate credentials that signal employability without ensuring meaningful skill acquisition or productivity. Although these programmes provide easily attainable certificates, they often lack comprehensive training and create a gap between perceived and actual competence. Consequently, while certificate courses offer

validation, they may misrepresent true skill enhancement, thereby constraining students' potential. This issue gets further intensified by the limited financial capacity of institutions, which limits their ability to appoint full-time/ permanent instructors and instead rely upon temporary or locally available resource personnel. Although these circumstances provide opportunities for collaboration between industry and academia through shared resources and incentives, they equally contribute to inconsistencies in skill development, undermine the quality of training offered to students and reduce students' access to wider labour markets beyond their immediate locality. Thus, IACs produce credentialed yet vulnerable labourers who are often relegated to precarious and temporary employment. Furthermore, the interplay between the demand for and supply of skills plays a critical role in determining the employability of graduates. Therefore, it is crucial to focus on IAC models that explore labour market dynamics in smaller towns or rural areas, moving beyond the typical urban and firm-centric collaboration approaches.

A significant portion of students in rural areas and small-towns come from marginalised communities, for whom immediate employment is often prioritised over attaining 'quality' jobs. Also, the institutions situated in these areas often have limited collaborative opportunities. This situation not only restricts students to the local labour market, which is predominantly informal, but also takes away their chances of pursuing quality employment opportunities. Thus, we propose that IAC, as currently constituted, produces employability without employment stability, and does so in ways that disproportionately affect students from marginalised or economically constrained backgrounds who are confined to local labour markets. The paper therefore calls for a reorientation of IAC models toward labour market realities, particularly in regions where small-firm economies dominate, and argues that skill development policy must be grounded in a political economy understanding of employer incentives, labour segmentation, and structural precarity.

Overeducation and Earnings Penalty in India: A Mismatch in Progress

Soumyajit Chakraborty Assistant Professor, University of Petroleum and Energy Studies, Dehradun, Uttarakhand

Kamlesh Kumar Maurya Assistant Professor, University of Petroleum and Energy Studies, Dehradun, Uttarakhand

Anup Kumar Yadava Assistant Professor, University of Petroleum and Energy Studies, Dehradun, Uttarakhand

The phenomenon of overeducation, where individuals hold qualifications beyond employment requirements, indicates a significant disparity in the labour market. Educational growth benefits society by educating citizens and encouraging civic engagement, but it also reduces efficiency when human capital investments do not pay off. Global data show demographic, institutional, and cyclical overeducation. Women, younger workers, and immigrants face

higher risks due to career upheavals, inexperience, and credential recognition issues. Human capital and matching theories view overeducation as a transient inefficiency, while job competition, assignment, credentialism, and social stratification models see it as a structural characteristic that reinforces labour market inequality. Overeducation among European Union (EU) graduates rose from 17% to 28% during the 2008 crisis, and currently, 15% to 30% of employees worldwide are considered overqualified.

The rapid expansion of education in India, combined with insufficient modifications to the labour market, has aggravated the situation. Empirical evidence employing high-dimensional fixed effects regressions, skill mismatch models, and ORU (over-, required-, and under-education) frameworks substantiates that overeducation results in pay penalties, even when accounting for demographic, occupational, and geographical variables. Data from the Periodic Labour Force Survey (PLFS) for 2023–24 indicates that the Indian workforce consists of 14% overeducated, 16% undereducated, and 70% adequately matched employees. The 'bumping down' tendency displaces less qualified individuals, resulting in cascade mismatches. Wage disparities are significant: overeducated people earn 7-11% less than their contemporaries, while undereducated workers lose up to 18%. While additional years of education produce tiny benefits, they do not meet expectations, jeopardising India's demographic dividend.

Gender-disaggregated studies show that women's returns on additional education are persistently lower than those of males, demonstrating cumulative labour market disadvantages. Sectoral variation is also evident in India's jobs and industries. Mitigating the overeducation penalty requires coordinated actions on both the supply and demand sides. We may increase job-skill alignment by synchronising curriculum with industry demands through vocational and technical education routes, as well as developing industry-academic cooperation. The demand side requires the creation of sector-specific job opportunities, improved career advising, recognition of both formal and informal education, and targeted upskilling for women and marginalised populations. Regular evaluation of skill gaps and changing relationships between occupations and schooling would enable timely policy adjustments. In the absence of extensive reforms in educational policy, labour market institutions, and equity initiatives, the economic potential of India's progressively educated workforce will remain underexploited, constraining both individual advancement and national production.

Regional Economies, Social Hierarchies, and Employment Deprivation: A Multilevel Analysis for India

Divya Satish Revankar Assistant Professor, Goa University, Panaji, Goa
Aswini K Mishra Professor, Birla Institute of Technology and Science, Mormugao, Goa

This study investigates the dynamics of employment deprivation (ED) in India, drawing on Periodic Labour Force Survey (PLFS) data from 2020–2024 and employing a multilevel

modelling (MLM) approach to simultaneously account for individual- and regional-level determinants. Employment deprivation is operationalised through three dimensions—unemployment, underemployment, and precarious or low-quality work—capturing both the absence of work and the poor quality of available employment. The analysis incorporates individual characteristics such as gender, education, and social identity, alongside group-level factors including regional economic clusters (REC), defined by sectoral composition and labour absorption capacity. Findings consistently identify gender as a critical determinant of ED, with women facing significantly higher odds of deprivation across all years studied. This gender gap is most pronounced in agriculture-dominated regions, where limited diversification of economic activities constrains women's access to quality employment. Education demonstrates a protective effect, with higher attainment levels associated with lower ED; however, the diminishing strength of this association over the study period suggests that education alone cannot overcome structural labour market barriers.

At the regional level, stark disparities emerge. Agricultural clusters exhibit significantly higher ED compared to industrial or service-oriented clusters, indicating the strong influence of regional economic structures on employment opportunities. Intraclass correlation coefficients (ICC) reveal that a substantial proportion of the variation in ED is attributable to regional differences. The likelihood ratio (LR) test confirms that the MLM approach significantly outperforms single-level logistic regression, underlining the importance of accounting for hierarchical data structures in labour market analysis.

The study's results underscore that ED in India is shaped by intersecting social and regional inequalities, with both individual disadvantages and structural economic contexts playing decisive roles. Addressing ED, therefore requires an integrated policy approach: tackling gender disparities in labour force participation, enhancing access to quality education, and promoting regionally balanced economic development. Strengthening non-agricultural employment opportunities in rural and agricultural regions, alongside targeted state-level interventions, can mitigate the persistent spatial and social divides. By adopting strategies that align economic growth with inclusivity, India can make substantial progress toward reducing ED and ensuring more equitable labour market outcomes.

Segmentation of the Labour Market and Heterogeneous Returns to Education across the Wage Distribution: Evidence from Periodic Labour Force Survey Data

Aibanskhem Nongspung Assistant Professor, St.Anthony's College, Shillong, Meghalaya

Using the data from the Periodic Labour Force Survey (PLFS) 2023-24, this paper seeks to estimate returns to education across the wage distribution. Empirical studies have typically relied on regression analysis focusing mainly on estimates at the mean of the conditional

wage distribution. This implies that the returns to education is assumed to be common across individuals that is individuals in both low paying and high paying jobs. But this is a restrictive view. The wage distribution can be regarded as a reflection of the range of unobservable ability, so that people at the bottom of the wage distribution are taken to have less ability and people at the top of the wage distribution are believed to have more ability. In such a situation, returns to education are likely to vary due to differences in these unobserved individual characteristics. This implies that for the same level of education there can be intra-sectoral differences in returns as returns can vary across the wage distribution.

Addressing the research question of whether the levels of education affects individuals differently across the wage distribution is important because such analysis can also provide information with regard to equality considerations of education that is whether education ameliorates economic inequality or exacerbates it. The present study utilises the quantile regression method developed by Koenker and Bassett in 1978. Quantile returns represent the wage differentials between individuals in the same education group but at different earnings quantiles. The analysis is undertaken for three segments of the labour market—regular salaried/wage employees (RSWE), casual workers, and self-employed workers.

Our findings indicate a large degree of heterogeneity in returns to different levels of education across the earnings distribution, as well as across sectors of employment. There is a clear pattern in RSWE and self-employment sectors where education is inequality-increasing. This is because returns increase at higher levels of education for RSWE and self-employed persons. In case of casual workers, we find that education is inequality-reducing. Moreover, the results show that relying on mean estimates can lead to wrong conclusions as quantile regression estimates reveal that schooling is not uniformly rewarded in the labour market.

Job Search and Labour Force Transitions in Urban India: An Analysis of Periodic Labour Force Survey Data

Deepak Johnson Assistant Professor, Christ University, Bengaluru, Karnataka

Divya Pradeep Associate Professor, Christ University, Bengaluru, Karnataka

This paper examines the job search methods among the urban unemployed in India. We focus on understanding how job-search methods relate to transitions in the labour market by analysing the rotational panel data from the 2023–24 round of the Periodic Labour Force Survey (PLFS). We find that formal channels, in particular, applying to prospective employers is the most relied upon search method. However, when disaggregated for social groups, scheduled castes (SCs) were found to depend relatively less on formal methods in comparison to other social groups. This might be due to the lack of confidence and trust in the formal hiring process owing to the stigma of caste. Scheduled caste workers tend to be concentrated in casual wage

work which may not require formal hiring but largely takes place through contractors and other community agents. With respect to gender, women show greater reliance on formal methods of search compared to men, possibly reflecting lack of effective social capital in terms of networks of family and friends who might contribute to information about availability of jobs. Social norms within families and communities may also restrict valuable information on available jobs to women whose work is largely seen as secondary to the primary wage earner in the family. Regular wage jobs might necessitate more formal search methods and might explain why women may rely on such search methods particularly in the urban areas. It is interesting to note that among those who found jobs, the formal channels were the most prominent among the scheduled tribes (STs) and SCs. Although the reliance of formal channels is less for the SCs, it seems that employment prospects are not high with the informal channels. Disaggregated data show that employment exchanges and private employment centres are important for the marginalised, owing to the lack of social capital. This points to the need for strengthening formal channels for the marginalised sections, with appropriate strategies for improving employment opportunities for those seeking work.

How much does Education Pay? Human Capital and Urban Wage Gap across Indian States

Neethu Thomas PhD Scholar, Birla Institute of Technology and Science, Sancoale, Goa

This study investigates the dual role of human capital endowments and their returns in shaping regional wage disparities across urban India. Utilising seven years of nationally representative data from the Periodic Labour Force Survey (PLFS), we employ a Mincerian wage equation framework, augmented with selection-corrected decomposition techniques, to disentangle the contributions of educational attainment and the economic rewards to education across Indian states.

Existing studies tend to focus either on aggregate differences in educational attainment or national-level returns to education, without accounting for how these returns may vary across states. Addressing this gap, the present study poses the following research questions: What explains the persistent wage differentials across Indian states? How do variations in both human capital endowments and their returns jointly influence regional wage gaps? To answer these questions, this study enables a detailed analysis of urban wage dynamics across Indian states. To the best of our knowledge, this is the first study which has used the rotational panel data for urban areas to examine the regional dynamics of wage disparities across states, and no one has combinedly analysed all types of employment (regular, casual and self-employed).

The research employs a Mincerian wage equation framework, to estimate the returns to education, followed by a two-stage Heckman correction model. Furthermore, the analysis incorporates a selection-corrected Mills ratio to address potential sample selection bias and

applies wage decomposition techniques to disentangle the contributions of endowments and returns to observed wage gaps. Our findings reveal significant heterogeneity, whereas lower educational attainment constrains wage growth in less developed regions, higher returns to education are the key drivers of wage disparities in more advanced regions. The analysis demonstrates that both endowment and return effects are significant, but their relative importance varies spatially, challenging the conventional focus on human capital endowments alone. Crucially, the decomposition analysis shows that wage differences across states are often more influenced by differences in returns or rewards to human capital than by the levels of human capital themselves.

By highlighting the interplay between educational distribution and regional labour market dynamics, this research provides new insights into the mechanisms underlying wage inequality in India and offers evidence to inform more effective, regionally tailored policy interventions.

Private Returns to Education in India: Insights from Panel Data

Aanchal Kimtani PhD Scholar, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Ample literature exists on wage determination in India. A number of studies have empirically verified the human capital theory by estimating the wage returns to education. Most of such studies rely on the Mincerian earnings equations wherein the estimates are generally derived from the use of least squares regression involving the dependent variable as the log of wages and the explanatory variables consisting number of years of schooling and experience along with other variables deemed relevant by the researcher in adherence to the context of the study. However, it is important to note that these estimates suffer from the sample selection bias and ability bias. Selection bias implies the error in estimation when only a sub-sample of individuals reporting the wage is used. Workers may possess abilities or traits facilitating productivity above additional years of education, leading to over-estimation in the rate of return to education.

With an aim to purge these effects, this study involves the estimation of returns to education using the Fixed Effects (within) model with Heckman sample selection correction. This nuanced approach provides detailed insights towards the presence and effects of the aforementioned biases on the returns to education in India. To this end, we make use of the Indian Human Development Survey (IHDS) panel which facilitates the aim of our study by tracking the same individuals across different points in times that is across the survey's waves.

The results obtained from such an exercise confirm the presence the two sources of biases and shed light on the effects of these on the returns to education in India. They also lead us to confirm the hypothesis of the human capital theory. The novelty of this study lies in the Fixed Effects (within) estimation of private returns to education, on which, there is limited

attention paid in the Indian context. Estimates of returns to education bear policy significance in their use to inform decisions regarding the allocation of public investment towards the different levels of education. Additionally, examining the education-earnings relationship is also a way of testing the poverty-reducing potential of education.

Gender Differences in Employment and Wage Disparities in India's Service Sector: A Decomposition Approach

Ankita Esther Das PhD Scholar, Christ University, Bengaluru, Karnataka
Aneesh M R Assistant Professor, Christ University, Bengaluru, Karnataka

This paper examines gender disparities in labour market participation and wages within India's service sector, drawing on data from the National Sample Survey Office (NSSO) and the Periodic Labour Force Survey (PLFS) for 2012 and 2023–24, respectively. The study aims to quantify the gender wage gap and identify the determinants of male and female labour force participation, situating these outcomes in the broader context of India's rapidly evolving service economy. We employ a logit regression model to estimate the probability of labour force participation, incorporating variables such as education, urban-rural segregation, marital status, age, and social group. These variables capture both human capital and socio-demographic characteristics known to influence workforce participation.

Our findings reveal persistent gaps in participation rates, with women's engagement in the labour market remaining substantially lower than men's, especially in higher-paying, formal service sub-sectors. To analyse wage differentials, we use an ordinary least squares (OLS) regression framework, allowing us to evaluate how education and experience shape earnings across genders. Results indicate that while both factors positively influence wages, women consistently earn less than men with comparable profiles. This wage penalty is most pronounced in the service sector, where industrial segregation channels women into lower-paying roles, reinforcing structural inequities. To disentangle the sources of wage disparities, we apply the Oaxaca–Blinder decomposition technique. The results show that of the observed 0.494 log point gender wage gap, only 0.057 log points can be explained by differences in measurable characteristics, such as education, experience, marital status, and distribution across National Industrial Classification (NIC) service sector categories. The remaining 0.437 log points — nearly 90% of the gap — are unexplained, indicating the presence of discrimination, institutional biases, and unobservable factors.

Our intersectional analysis further highlights that caste and gender jointly shape labour market outcomes, with women from historically marginalised castes facing compounded disadvantages. This dual marginalisation not only limits their participation in higher-paying occupations but also depresses their wage returns relative to both men and higher-caste

women. These findings have significant policy implications. Reducing industrial segregation, promoting equitable access to education and training, and enforcing anti-discrimination laws are essential steps toward narrowing the gender wage gap. Interventions must also address the social norms and institutional structures that perpetuate gendered labour market outcomes.

By combining logit and OLS regression models with Oaxaca–Blinder decomposition, this study contributes a comprehensive empirical analysis of gendered labour market dynamics in India's service sector. The persistence of large unexplained wage gaps underscores the need for multi-pronged strategies that integrate education, awareness, and legal reforms to achieve genuine gender parity, thereby fostering inclusive economic growth.

TECHNICAL SESSION **2.7**

Earning disparities between Migrant and Non-migrant Workers: A Quantile Decomposition Analysis of Indian Labour Market

Vijay Kumar PhD Scholar, Indian Institute of Technology, Indore, Madhya Pradesh

Kalandi Charan Pradhan Assistant Professor, Indian Institute of Technology, Indore, Madhya Pradesh

The labour market in developing countries is characterised by a dual nature comprising formal and informal sectors. The institutionally regulated regular salaried (formal labour) market, offering stable jobs with higher pay and other social security benefits, coexists with the casual labour (informal labour) market characterised by low pay and flat returns to education. Migration may have a different effect on the migrant worker's earnings and employment in the regular salaried and casual labour market as compared to their non-migrant counterparts.

In this context, this study examines the wage differentials between migrants and non-migrants in regular and casual labour markets of India using data from the Periodic Labour Force Survey (PLFS) 2020–21. We employed unconditional quantile decomposition in conjunction with the Oaxaca-Blinder decomposition to analyse the wage gap and the factors contributing in wage disparities between migrants and non-migrants.

Findings indicate that within the regular salaried, non-migrants earn more than migrants at the lower quantiles of the wage distribution. Migrants surpass non-migrants in earnings beyond the 50th quantile of the wage distribution. In contrast, the casual labour market exhibits a persistent wage disadvantage for migrants across the distribution, with a marginal advantage observed only at the 90th quantile. The decomposition results further reveal that the wage gap in the regular salaried sector is primarily driven by the unexplained component. While in the casual labour market, it is primarily attributed to the explained component. Furthermore, the wage differentials in both labour markets are determined by the individual characteristics, mainly gender, experience, and area of residence. Moreover, caste, religion, education, occupation, and regional variations across six zones play a significant role in explaining the wage gap between migrants and non-migrants in both labour markets.

The findings underscore the policy suggestion to reduce the wage gap between migrants and non-migrants through prioritising the enforcement of labour regulations, ensuring access

to minimum wages, and expanding social security coverage, primarily within the casual labour market.

Diminishing One Gap, Widening Another: Unintended Consequences of Adult Literacy on Child Dropouts in India

Sulagna Bhattacharya PhD Scholar, Indian Institute of Management, Kolkata, West Bengal

Views on adult literacy programmes are mixed. On one hand, it is expected to contribute positively to creating a social identity of an individual. On the other, several studies report null impact of adult literacy programmes on earnings, underscoring the importance of formal schooling in early years of development and growth. These programmes, however, have been linked to a general improvement in standard of living with the help of better health and hygiene knowledge, awareness of nearby employment opportunities, improved wages from human capital formation as well as inter-generational spillovers such as valuing education and therefore, sending their children to school. While there have been a few studies analysing maternal literacy and child health outcomes, there is scant literature examining the impact of adult literacy on child educational outcomes showing null or at best modest impacts on academic skills of children.

In this paper, we explore the impact of such an adult literacy programme named 'Saakshar Bharat' implemented in 2009 in selected rural backward districts in India for adults aged 15 years or above, on a host of scholastic indicators such as private school enrolment, probability of dropping out, and reading scores of 5 to 16 year old children using Annual Status of Education Report (ASER) data in a difference-in-difference (DiD) framework. We observe that there is a 26.0% aggravation in out-of-school decisions among children in the treated districts on an average, accompanied by similar effect size on likelihood of early dropouts, especially before secondary education completion and worsening reading scores by 0.04 standard deviation (SD). However, these children are 7.6% more likely to enrol in private schools relative to the control districts which indicate an aspirational shift of parents exposed to the programme towards sending children in presumably superior quality schools.

The results show that while private school participation rises for some, dropout decisions and learning outcomes do not improve in general, which point out towards a possible quality compromise with increased access in schooling, commonly referred to as the 'quantity-quality trade-off' in educational context. Mechanisms reveal the role of aspiration-frustration-dynamic playing out in the form of reduced human capital investment and lesser parental involvement coupled with household labour substitution in these low income-constrained households due to lack of time and resources.

Double Burden of Unpaid Domestic Work and Paid Work on Married Women: Evidence from India

Sunny Shankar Ladkat PhD Scholar, Indian Institute of Technology Hyderabad, Hyderabad, Telangana

Karan Babbar Assistant Professor, Plaksha University, Sahibzada Ajit Singh Nagar, Punjab

Gaurav Dhamija Assistant Professor, Indian Institute of Technology Hyderabad, Sangareddy, Telangana

This study investigates how women's employment shapes the division of unpaid domestic labour within Indian couples. Despite gains in female education, Indian women still perform a vastly disproportionate share of household and care work. It raises the critical question of whether women's employment alleviates this unequal burden of domestic work. Using nationally representative data from the 2024 Indian Time Use Survey (TUS), we analyse time-use patterns in married couples. We employ Ordinary Least Squares (OLS) regressions with robust fixed effects, complemented by Propensity Score Matching (PSM) and Oster bounds to ensure our findings are robust to potential selection bias. Our results show that employed wives spend significantly less time on unpaid work than their counterparts, with the most significant reductions seen among regular salaried workers and those with longer paid work hours. However, this adjustment is significantly one-sided. Husbands' contributions increase only marginally. The spousal gap in unpaid work narrows, but almost entirely because women do less and not because men do more.

To explain this persistence, we examine the mechanism of gender deviance neutralisation, which aligns with the "doing gender" framework. Even when both spouses are unemployed, or when wives spend more time in paid work than husbands, men contribute substantially less to unpaid domestic labour. This pattern reflects the resilience of gender norms, where household work remains culturally assigned to women, and men's limited participation serves to reinforce traditional masculinity. While women in full-time, salaried jobs experience the largest reductions in unpaid work, the rebalancing remains incomplete, leaving them with a "double shift" of paid and unpaid labour. This unequal distribution not only affects women's well-being but also constrains their career investment.

The study highlights the stark limits of women's employment as a standalone pathway to gender equality within the household. While a job may lighten a woman's domestic load, our results demonstrate that deep-seated gender norms ensure the responsibility for unpaid work remains firmly on her shoulders.

Beyond Marriage Driven Migration Labour Force Participation of Married Migrant Women in India

Sampriti Biswas Research Assistant, Jadavpur University, Kolkata, West Bengal

Jajati Keshari Parida Professor, University of Hyderabad, Hyderabad, Telengana

This paper develops a theoretical model to explain the labour market behaviour of women who migrate due to marriage, focusing on how they maximise the joint utility of their households. Unlike the common perception that female migrants primarily participate in the labour force when they migrate for work, this study highlights that marriage-migrant women also engage in economic activities under certain conditions. The model shows the trade-offs faced by women between household responsibilities and labour force participation, capturing the interplay among aspirational, distress and constraint factors. This framework offers a microeconomic foundation to understand why some marriage migrants participate in the labour market while others remain outside it.

The empirical analysis draws on a dataset from the National Sample Survey (NSS), covering the period 1983–2021, to show the composition and characteristics of the married migrant female labour force in India. Trends over nearly four decades are examined to identify shifts in participation rates and sectoral distribution. For the econometric analysis, Probit and Instrumental Variable (IV) Probit models are estimated using the most recent NSS round (2020–21) to capture determinants of participation with greater precision.

Results capture a complex interaction of aspirational, distress, and constraint factors influencing participation at the micro level. Aspirational factors such as higher potential wages and educational attainment significantly raise the likelihood of participation, while distress and constraint factors—such as large household size, greater number of dependent children, and inadequate childcare facilities—are associated with reduced participation or stagnation. The empirical evidence from India also demonstrates that the women will join work force when their income effect will dominate the substitution effect. However demand side of the labour market also makes a huge impact on determination of positive female labour force participation. So, it is very crucial to implement policies that promote more equal societies and promote safe and dignified work place for the married migrant women.

Labour Market Impacts of Water Conservation under a National-scale Public Works Programme in India

Barsinge Gajanan Barsinge Research Assistant, Indraprastha Institute of Information Technology, New Delhi

Utkarsh Arora Research Assistant, Indraprastha Institute of Information Technology, New Delhi

Saif Ali Sr. Research Associate, Indraprastha Institute of Information Technology, New Delhi

Gaurav Arora Associate Professor, Indian Institute of Information Technology, New Delhi

This study evaluates the causal impact of farm pond construction under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on rural labour market outcomes in India. Using geo-coded data on approximately two million ponds, from the Geo-MGNREGA portal, we link annual Gram Panchayat (GP)-level employment data from 2014–2024 to a random sample of 15,000 GPs across the country. Employing a fixed-effects panel regression model following Propensity Score Matching (PSM), we estimate treatment effects on total household employment, Scheduled Caste (SC) employment, Scheduled Tribe (ST) employment, and women's employment.

Our results show that farm pond construction generates a statistically significant increase of roughly 100 households in annual employment per GP. While SC and ST households experience positive gains, the magnitude is smaller than that for the general population, indicating persistent inequalities in programme reach. Women's employment rises significantly by about 74 households suggesting that local, flexible MGNREGA worksites help promote female labour force participation. Several control variables strongly influence these outcomes. Gram Panchayats with higher shares of households engaged in farming and greater irrigated area experience larger employment gains, while the presence of a high school is associated with reduced reliance on public employment schemes, likely due to alternative education-linked opportunities. The availability of *pucca* roads significantly enhances employment among SC/ST households, underscoring the importance of connectivity for accessing rural worksites.

We further validate these findings using a cross-sectional logit regression combining village-level labour participation data from the 2013 Economic Census with socio-economic indicators from the 2011 Population Census and 2012 Social, Economic and Caste Census (SECC). Restricting to ~27,000 GPs with no farm pond before 2011 and defining treatment as pond construction in 2012, we find that farm pond construction has a statistically significant positive impact of 14% (95% confidence interval [CI]) on the share of local non-farm employment, though the effect on female non-farm employment is statistically insignificant. Notably, the presence of tap water infrastructure has a large positive effect across employment categories.

These results highlight the dual role of MGNREGA's water-conservation assets in supporting agricultural resilience and influencing rural labour dynamics, with effects shaped by local socioeconomic and infrastructural conditions.

Married Female Labour Force Participation in the North Eastern States of India: Time Use Survey

Rashika Singh PhD Scholar, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Anurag Asawa Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Santoshi Rajguru Research Associate, Gokhale Institute of Politics and Economics, Pune, Maharashtra

As per the estimate of International Labour Organization (ILO), the global female labour force participation rate (LFPR) is approximately 53.0% whereas in India it is 29.2% The LFPR for individuals aged 15 years and above in India has increased by 8.0%. In contrary, the female labour force participation has increased by around 14.0%. The labour force participation of married working females in India is around 16.0% whereas the LFPR of married females in the Northeastern states is roughly 10.0% which is comparatively lower than the nation's participation. The identified gap in terms of that northeastern states are a matrilineal society, the difference between perception and reality in terms of employment participation of married females will be studied.

Every state in India has its own distinct status for women due to a variety of factors such as gender differences, cultural norms, and the traditional nature. The paper aims to study in detail labour force participation of married females with the help of Time Use Survey (TUS) 2019 and 2024 along with the determinants responsible for the married female (age 15-65) labour force participation in the northeastern states of India. The majority of married working females are employed in the rural sector — 73% are in the urban sector and 27% are in the rural sector with a significant portion belonging to Scheduled Tribes. Their educational level is mostly in the middle education category. Employment is mainly in regular wage/salaried jobs, as helpers or own-account workers. Women are more prevalent in the unorganised sector, particularly in rural agriculture.

To study it in depth, variables such as sector, social group, and the education levels of both married women and their husbands, as well as the husband's employment status, child age groups (0-5 and 6-14), and household size, as provided in TUS unit-level data will be examined. Analysing these factors alongside the employment participation of married women will help identify the specific areas where intervention is needed. We propose to use a logit model to estimate the probability of the employment participation of married females with respect to the determinants of LFPR. The majority of married women in the northeastern states rely on their husbands or families when making employment decisions, which exacerbates the situation. This analysis will be highly beneficial for policymakers to identify key factors necessary for the effective implementation for increasing the labour force participation of married females in the northeastern states of India.

Spousal Time Sharing Arrangements in Unpaid Work: Evidence from the Time Use Survey 2024

Bhargavi Shanigarapu Research Associate, Azim Premji University, Bengaluru, Karnataka

Subhasree Ghatak Fellow, Azim Premji University, Bengaluru, Karnataka, Post Doctoral scholar

Extensive evidence from the existing literature highlights that women continue to bear a disproportionate burden of unpaid domestic and care work, both globally and within India. While this has been widely established, the objective of the present study is to go a step further and investigate how stark these disparities are within a spousal sample—that is, between husbands and wives in the same household.

Understanding spousal time-sharing dynamics is critical, as these arrangements significantly influence women's participation in the labour market and subsequently affect their employment outcomes, income opportunities, and work arrangements. Although unpaid domestic and care responsibilities are theoretically shared between spouses, in practice, they remain overwhelmingly wife-centric duties in the Indian context. To analyse this pattern, we employ the recently released Time Use Survey (TUS) 2024 data and construct a spousal pair sample. This enables us to examine intrahousehold inequalities in time allocation and to delineate factors that aggravate time inequality, eventually leading to time poverty for women.

Our primary focus lies in studying how employment status affects the disposable time that both husbands and wives allocate to unpaid domestic and care activities. To capture generational differences in spousal arrangements, we divide the sample into two groups: couples where both partners are aged 30 years or younger, and couples where both spouses are older than 30. Results from Ordinary Least Squares (OLS) regressions reveal a nuanced picture. Among younger couples, domestic work responsibilities are shared somewhat more equitably between husbands and wives, suggesting a gradual shift in gender norms and expectations. However, the burden of unpaid care work—such as childcare, eldercare, and other dependents' needs—remains disproportionately borne by wives in younger households. This results in a widening gender gap, whereby younger women face heightened time poverty despite some progress in the sharing of routine domestic tasks.

Taken together, the findings underscore that while there are indications of improvement in domestic labour-sharing among younger couples, persistent inequalities in care responsibilities continue to undermine women's control over their time and restrict their economic opportunities.

Returns to Migration and the Task Content of Jobs

Vasavi Bhatt Assistant Professor, Indian Institute of Management, Tiruchirappalli, Tamil Nadu

Shweta Bahl Assistant Professor, Indian Institute of Management, Rohtak, Haryana

Migration will become essential for economies at all income levels in the coming decades amidst the pervasive economic imbalances, shifting trends in demography, and increasing vulnerability to climate change. Migration is a development issue, which, when effectively managed, can be an opportunity to drive prosperity and help achieve the United Nations' Sustainable Development Goals (SDGs). Therefore, the outcome of migration on the migrants, the natives, and the destination remains an interesting question for academicians and policymakers.

This study provides estimates of the internal migrants and non-migrants, by the task content (non-routine cognitive analytical, non-routine cognitive interactive, routine cognitive, non-routine manual, and routine manual categories) categories of their jobs in India. To this end, we use the Periodic Labour Force Survey (PLFS) 2020-21 which has information on the social, economic, and demographic particulars of the individuals including their migration status. The jobs are classified by their task content using O*NET dataset.

The regression analysis of the paper aims to assess the difference in earnings in rural and urban areas by the migration status of the individual, the task content category of the job of the worker, and the interaction between these two forces. The results depict that compared to non-migrants, migrants in routine manual jobs suffer a penalty in rural and urban India. Otherwise, a migrant in any job category has higher earnings than a non-migrant in a routine manual job in both rural or urban areas.

These findings put the limelight on differences in the tasks performed by natives and migrants as a source of variation in their earnings. So far, there has been little focus on the tasks performed by migrants at the destination place compared to the natives with the same level of education and other socioeconomic characteristics. Thus, this paper is a contribution to the literature on returns to migration and task content of jobs, an issue that has been extensively discussed for developed countries but not developing economies.

TECHNICAL SESSION 2.8

Tracking Shifts in Internal Labour Mobility in India: Insights from NSS and PLFS Survey

Sayan Das PhD Scholar, Ramaiah University of Applied Science, Bangalore , Karnataka

Monalisha Chakraborty Assistant Professor, Madras Institute of Development Studies, Chennai, Tamil Nadu

India's transition from the world's tenth-largest economy in 2011 to the fourth-largest by 2025 has been underpinned by the complementary role of its informal labour force alongside formal sector growth. Internal labour migrants, who constitute the majority of the 400–450 million informal workers, form the backbone of sectors such as construction, agriculture, manufacturing, and services, collectively accounting for a substantial share of national output. While remittances enhance rural consumption and sustain local economies, persistent labour market challenges—particularly low job quality, wage inequality, and gendered migration patterns—highlight structural asymmetries.

This study investigates internal labour migration trends within India amid changing economic conditions, focusing exclusively on employment-related migration for people aged 15 to 64 years who have stayed between one and six months at their new location. Using data from both the National Sample Survey Office (NSSO) 64th round (2007–08) and the Periodic Labour Force Survey (PLFS) (2020–21), the analysis provides a detailed picture of migration's socioeconomic dimensions, including its impact on household well-being, gender roles, and community dynamics.

The findings reveal a transition in migration patterns: initial dominance of young, urban-based male migrants seeking jobs has shifted towards older, married individuals with a growing presence in rural and semi-urban areas. Despite some increase in female participation, men continue to dominate employment migration. The study highlights an increasing representation of migrants from disadvantaged social groups such as Other Backward Classes (OBCs), Scheduled Castes (SCs), and Scheduled Tribes (STs), often with lower education levels, reflecting a shift towards informal, low-skilled rural employment. Most migrants remain land-poor, engaged in insecure jobs without formal contracts or social security, especially men. Marriage status has changed significantly—employment migration is no longer solely

an individual pursuit of upward mobility but has become embedded in household survival strategies and ruralisation processes.

Overall, internal labour migration in India has evolved into a mechanism for livelihood sustenance among marginalised groups rather than just economic advancement. These findings underscore the urgent need for targeted, inclusive policies addressing structural inequalities to improve job quality, social protection, and equitable economic growth in India's informal labour market.

Rethinking Employment Vulnerability: Evidences from India

Priya Harchandani Assistant Professor, Bennett University, The Times Group, Greater Noida, Uttar Pradesh

Samik Shome Professor, Nirma University, Ahmedabad, Gujarat

The labour markets across the globe are undergoing a paradigm shift in terms of opportunities and outcomes for the workforce. Over time, the labour markets have moved away from standard employment relationships towards flexible, non-standard employment opportunities. Work has become irregular, coupled with low pay and poor working conditions. An increasing share of workers in the regular jobs, or formal sector jobs are becoming highly susceptible to the risks of employment owing to the conditions of such employment. Yet, there has not been any consensus in the extant literature on how to define and gauge vulnerable employment.

Delineating from the pre-conceived notions of demarcating self-employment as a vulnerable category, the study asserts the importance of a metric of vulnerability to identify and separate vulnerable jobs from the non-vulnerable ones, bringing out clearly the quality of employment generated in the country. We examine the dynamism of vulnerable employment in the India and assert the existence of vulnerability when a worker works for an employer or in a paid job. We first develop a definition of vulnerable employment that captures the facets of paid employment insecurities. Based on this definition, a composite index for measuring vulnerable employment has been constructed.

Our findings reveal that in India, access to decent work is strictly restricted for females, especially those who play the primary role of earning in the household and workers with low general and technical education. Vulnerability is more likely to affect young and older workers especially in small households with no surplus labour. Even with high levels of education, a large share of workers are unable to find secured jobs and an increasing share of those in high skills jobs are vulnerable. With shifts in employment from traditional to modern sectors in India, jobs in urban areas are found to offer more vulnerability compared to rural areas, highlighting job-crisis even in fast-growing industries.

A Latent-Index Model of Education–Network Complementarity in Job Access

Shreshti Rawat Assistant Professor, Meghnad Desai Academy of Economics, Mumbai, Maharashtra

India's labour market continues to display marked inequalities in access to "good" jobs, understood here as formal, secure, and relatively well-paid employment with social protection. This paper investigates whether education and social networks operate as complements in creating such access, rather than as independent or substitutable drivers. We build a latent index of access to good jobs and model the probability of entry using a logistic specification that embeds both non-linearities and interaction terms between schooling and networks. Networks are operationalised through household-affiliated and community-level ties that differentiate bonding links within close groups from bridging links that extend opportunity sets beyond one's immediate social circle.

The empirical analysis uses the India Human Development Surveys for 2004–05 and 2011–12, exploits individual identifiers to construct a balanced panel, and merges to household characteristics in order to capture shifting endowments and constraints over time. To address selection into employment and time-invariant unobservables, we estimate a fixed-effects Heckman selection model. This approach allows identification of within-person changes in access associated with marginal improvements in schooling and network strength, as well as their interaction. We test for threshold effects in education and networks that may generate discontinuous gains in job access once minimum levels are reached. Heterogeneity is studied along salient social dimensions, including caste, religion, and gender, in order to assess whether complementarities are stronger for groups facing historically constrained opportunity sets. Robustness checks consider alternative definitions of "good" jobs, alternative network proxies that distinguish strong ties from weak ties, and sensitivity to urban–rural context and local labour-market conditions.

The contribution is threefold. Firstly, the paper provides an explicit test of education–network complementarities in a large developing-country context, using longitudinal data and a selection-corrected framework. Secondly, it quantifies average and type-specific network effects and maps the education × network interaction to policy-relevant thresholds for both schooling and social capital. Thirdly, it links these estimates to feasible levers for economic policy, including investments in secondary and tertiary education quality, programmes that widen bridging opportunities such as internships, placement cells, alumni and community mentoring, and initiatives that lower information frictions in job search.

Preliminary estimates indicate that networks amplify the returns to schooling in the probability of entering formal employment, with especially pronounced effects for disadvantaged groups. Findings will inform the design of complementary education and network-building interventions that expand equitable access to good jobs.

Between and Within group disparities: Caste and Class Dynamics during Economic Growth in India

Vaishali Kohli Assistant Professor, BML Munjal University, Gurgaon, Haryana

Caste and class are two major markers of social and economic stratification in India. They play a crucial role in sustaining and strengthening the process of social exclusion. The economic literature is divided in its opinion in terms of the evolution of caste and class dynamics, and the resulting transition in the socioeconomic outcomes of different identity groups in India over decades of high economic growth.

In this paper, we focus on the celebrated period of high economic growth in India between 1999-2000 and 2011-12 to explore how the between- and within- caste/class disparities have been shaped over the peak growth period, using consumption expenditure as the economic outcome. The analysis is based on four rounds of employment-unemployment surveys of the National Sample Survey Organisation covering the period 1999-2012.

The empirical analysis is split into four parts. First, in order to understand the explanatory role of caste, class, and the interaction of caste and class identities (along with other controls) in determining the consumption expenditure at an average level, we run Ordinary Least Squares (OLS) regressions separately for rural and urban sector. However, the OLS estimates only give results at the mean level and do not explain the relationship across different points of the consumption distribution. For that, we make use of quantile estimation and derive regression estimates across different quantiles of the consumption distribution.

Further, in order to analyse between and within group disparities in terms of consumption expenditure, we use the Blinder-Oaxaca and Machado Mata decomposition methods. The Blinder-Oaxaca method decomposes the gap in the mean consumption expenditure of Schedules Castes (SCs)/Scheduled Tribes (STs) and Other Backward Classes (OBCs) with respect to Forward Castes into two components—the 'explained component' and the 'unexplained component', or the 'coefficients effect' which has also been referred to as the discrimination coefficient in the literature. The detailed decomposition exercise consists of four parts: computation of inter-caste disparities, inter-class disparities, inter-caste disparities for a given class position, and finally, inter-class disparities for a given caste identity across rural and urban sectors. However, given that consumption expenditure is not uniformly distributed we also employ the Machado Mata quantile regression decomposition method to further decompose the consumption expenditure gap between two groups at different parts of the consumption expenditure distribution.

The analysis suggests that on an average, the consumption disparities between SCs/STs and Others, and OBCs and Others have further intensified over this period in the rural sector, whereas the gap has narrowed in the urban sector. In terms of class disparities, on an average both peasants and non-agriculture self-employed (NASE) are better-off than rural

labour, and self-employed are better off than regular/casual workers in the urban sector. However, over time this disparity has reduced for peasants, whereas, it has widened for NASE and self-employed in the rural and urban sector, respectively. The average and quantile level decompositions suggest that in most cases the consumption differences for the deprived castes and classes have been further sustained over high growth period with a dominant and increasing discrimination effect.

The analysis reveals that the interplay of caste and occupational class, capturing both between-and within-group dynamics, significantly shapes and determines the economic outcomes for individuals belonging to different identity groups and the intensifying impacts of these interactions have played important role in determining the pattern of disparities across groups during the peak growth period.

Economic Growth and Youth Dynamics through the lens of Youth Employment: A Panel Analysis of 31 OECD Countries from 2002 to 2020

Akash Kumar Mukherjee PhD Scholar, University of Kalyani, Kalyani, West Bengal
Anupam Hazra Assistant Professor, University of Kalyani, Kalyani, West Bengal

This study investigates the interrelationships between youth labour force participation, youth employment, and economic growth across 31 OECD countries from 2002 to 2020. It employs a robust econometric panel analysis using the Two-Stage Least Squares (2SLS) method to address the challenges of endogeneity, reverse causality, and regional heterogeneity. By incorporating lagged demographic variables as instrumental variables, the study offers a comprehensive examination of the factors that influence both youth labour market dynamics and economic growth. The findings reveal a strong positive relationship between youth labour force participation and gross domestic product (GDP) per capita growth, aligning with human capital theory, which asserts that a higher level of workforce engagement among youth fosters increased productivity, innovation, and overall economic development.

The study further uncovers a bidirectional relationship between youth employment and economic growth. On one hand, economic growth generates more employment opportunities for youth, while on the other hand, a higher rate of youth employment supports economic growth through enhanced consumption and productivity. However, the study also highlights a key challenge in some OECD regions: "jobless growth." This phenomenon occurs when economic expansion does not result in proportional increases in youth employment, often due to mismatches between the skills of the youth workforce and the demands of the labour market, as well as structural rigidities in the economy. The transition to capital-intensive industries, for instance, often fails to create sufficient youth employment.

The study emphasises the need for policies that tackle these structural barriers, such as improving vocational training, aligning education systems with labour market needs, and

addressing labour market rigidities. These policy recommendations are crucial for ensuring that economic growth leads to meaningful and sustainable employment opportunities for young people. Overall, this study contributes valuable insights into the ongoing discourse on youth labour dynamics, emphasising the critical need to bridge the gap between economic growth and youth employment in developed economies.

Labour Market Outcomes over the Life-Cycle: Formal and Informal Vocational Education and General Education

Ronak Maheshwari PhD Scholar, Madras School of Economics, Chennai, Tamil Nadu
Brinda Viswanathan Professor, Madras School of Economics, Chennai, Tamil Nadu

In India and across the world, the youth unemployment rate remains higher than the adult unemployment rate, with challenges to the school-to-work transition as a key driver. In many advanced economies, vocational education and training (VET) is seen as a potential way to smooth the process of school-to-work transition. In the recent years, India has also launched various national and sub-national schemes, aiming to tackle the youth unemployment problem. Unlike the advanced economies with a well-established VET system, informal VET is dominant in India. Most of the Indian studies have focused on short-term economic outcomes associated with VET, such as comparing returns to formal, informal, and no VET.

This study diverges from these studies by comparing the employability (probability of employment) of individuals with formal VET, informal VET, and no VET over the life-cycle, using the nationally representative Periodic Labour Force Survey (PLFS) data. This enables us to investigate the long-term association between various VET types and employment, rather than just their immediate impact on employment. A logit model is used to examine the employment probability, and a multinomial logit model is used to examine the type of employment associated with the different VET types over the life cycle.

Since men and women have different labour market trajectories and a higher incidence of NEET (Not in Education, Employment, or Training) among women, this study is limited to men. Our findings reveal that in the short run, informal VET is associated with a higher probability of employment as compared to no VET. However, with an increase in age, the probability of employment increases for individuals with formal VET. This shows that while in the short run, informal VET can be more instrumental in getting employed, having formal VET increases the probability of employment over the life-cycle or in the long run. The findings from the multinomial logit model reveal that formal VET shows increasing advantage over the life cycle for regular wage employment as compared to casual wage work. Overall, the findings reveal that the life-cycle perspective adopted in this study highlights the need for policies that balance early employment readiness with long-term resilience in the labour market.

Birth Order, Presence of Siblings, and Education-Occupation Mismatch: Evidence from India

Shweta Bahl Assistant Professor, Indian Institute of Management, Rohtak, Haryana

The intricate relationship of birth order, that is, the sequence in which an individual is born in a family, and presence of siblings (family size) with labour market outcomes, particularly in the context of education and occupation, has been a topic of research in the area of economics and sociology since decades. This paper aims to analyse the intricate relationship between the presence of siblings, order of birth, and education-occupation mismatch (EOM), leveraging nationally representative data from the Periodic Labour Force Survey (PLFS) 2022-23 for India. In particular, this study analyses: (i) whether birth order shapes EOM patterns, and (ii) whether the presence of siblings alters the likelihood of experiencing EOM.

The paper opted for a sophisticated machine learning techniques like LASSO and Random Forest to complement the traditional econometric models such as Logistic regression. The paper finds that while birth order has a marginal effect on EOM, the presence of siblings is a strong indicator of EOM status, that is, overeducated, undereducated and adequately educated. In particular, it is found that individuals without siblings (only child) have a higher likelihood of being overeducated and less likely to be undereducated and adequately educated than those with siblings. LASSO and Random Forest models confirm the results.

While the research methodology is robust, the limitations are inevitable. Firstly, the PLFS data is cross-section, hence, causality is difficulty to establish. Secondly, the detailed information on family dynamics is not available in our dataset. The future studies can address these gaps. The findings also highlight the need for policymakers to undertake relevant educational planning and labour market interventions.

The literature till now has paid negligible attention to the impact of siblings and birth order on the interaction of education and labour market outcomes measured through EOM. This study fills this lacuna.

Landslides, Household Resilience, and Time Allocation in India

Sila Mishra PhD Scholar, Indian Institute of Technology, Kanpur, Uttar Pradesh

The rise in global temperatures has intensified attention in the economics literature on the links between environmental conditions and development outcomes. Time and income are critical inputs into human capital formation, yet during natural disasters, households may reallocate these resources in ways that directly influence their resilience and well-being.

Using data from the 2019 and 2024 Indian Time Use Surveys (TUS), this study examines household resilience and individual time allocation among three age groups—children,

working-age adults, and the elderly—in households exposed to landslides. The study analyses adjustments along both the extensive margin (whether individuals participate in an activity) and the intensive margin (time spent conditional on participation).

The regression results indicate that among working-age adults, landslide exposure is associated with increased time in employment and reduced time in unpaid domestic work and adult care. Elderly individuals spend less time in unpaid domestic work and more time in cultural, leisure, and self-care activities. Children in affected households reduce their time on learning activities while increasing time in cultural and leisure pursuits. Gender-disaggregated results show that women allocate more time to employment and less to unpaid domestic work and caregiving, while men increase their employment hours but reduce unpaid domestic work as well as cultural and leisure activities. Socially advantaged working-age adults spend more time in employment and cultural/leisure activities and less in unpaid domestic work, caregiving, and self-care.

Income and family size emerge as important mechanisms. In higher-income households, working-age adults devote more time to employment, childcare, and adult care, and less to unpaid domestic work. In larger households, they increase time in employment and self-care while cutting unpaid domestic work and caregiving. Among children, both higher income and larger family size are associated with less time on learning and more on cultural and leisure activities. At the extensive margin, landslide-affected working-age adults are less likely to participate in employment and more likely to participate in domestic work.

Demographic Transition without Labour Market Inclusion:
A Cohort-Based Analysis of Female Employment Quality in India

Aakash Sinha Research Associate, Institute for Human Development, New Delhi

Arjun Dubey Research Associate, Institute for Human Development, New Delhi (NCT)

India has undergone significant demographic change over recent decades, including declining fertility, delayed marriage, and rising female education attainment. Demographic transition theory suggests that such shift should facilitate women's integration into the labour market and contribute to broader economic development. Yet female labour force participation in Indian remains persistently low, raising questions about the extent to which demographic change has translated into improved labour market outcomes for women. This paper examines the relationship betwenn demographic transition and female labour market inclusion through a cohort-based analytical framework. using data from National Family Health Survey (NFHS-4 and NFHS-5), the study documents cohort-wise changes in fertility, marriage timing, and education among women. These demographic patterns are then examined alongside labour market outcomes using recent rounds of the Periodic Labour Force Survey (PLFS), with particular attention to employment quality, distinguishing between regular wage employment, casual

labour, and self-employment, as well as indicators of informality. The analysis explores whether younger cohorts of women - who have experienced lower fertility and higher educational attainment - exhibit improved labour market participation and access to more secure forms of employment, after accounting for key socio-demographic characteristics. By focusing on cohort dynamics rather that period averages alone, the paper seeks to shed light on the structural relationship between demographic transition and labour market transformation in India. The study contributes to ongoing debates on gender, employment and development by assessing whether the demographic conditions often associated with a potential dividend have been accompanied by corresponding changes in labour market absorption capacity, The findings are expected to have implications for labour policy and strategies aimed at promoting inclusive employment in the context of demographic change.

TECHNICAL SESSION 2.9

Financial Security Meets Social Safety: Insights from India's Gig Workers

Bita Afsharinia Research Associate, Indian Institute of Science, Bengaluru, Karnataka, Postdoctoral fellow

Anjula Gurtoo Professor, Indian Institute of Science, Bengaluru, Karnataka

Gig work often limits workers' access to social security worldwide. While income contributes to financial well-being, monetary gains alone are insufficient to protect workers from vulnerabilities related to health, safety, and social recognition. The role of social security access in shaping these outcomes remains understudied. This study examines how financial well-being affects access to social security benefits among platform workers, both directly and through mediating mechanisms, and how these factors influence job choices within precarious employment contexts.

The analysis draws on secondary data from 530 platform-based gig workers (cab drivers, delivery executives, and pickers/packers) aged 18–36 years, across 10 Indian cities including Ahmedabad, Jaipur, Pune, Lucknow, and Visakhapatnam. A subsample of 258 low-income workers earning less than â‚10,000 per month was also assessed. Data were collected using structured surveys covering demographics, financial well-being, access to benefits, and life satisfaction on a 5-point Likert scale. Structural Equation Modelling (SEM) was employed to test mediational pathways, while multinomial logistic regression examined categorical job-choice outcomes.

Guided by Conservation of Resources (COR) theory, which explains how individuals strive to acquire and protect resources under stress, three main findings emerged. Firstly, financial well-being alone does not significantly enhance subjective well-being among low-income workers. Secondly, access to social security benefits plays a critical mediating role, indicating that institutional support is essential for translating financial resources into improved life satisfaction. Thirdly, multinomial logistic regression shows that both financial well-being and benefit access shape occupational choices in the informal sector, underscoring the interplay of economic and institutional factors in determining workers' trajectories.

Overall, the study highlights that income alone cannot safeguard gig workers against precarity. Integrated policy frameworks and portable safety nets are crucial to strengthening worker protection, ensuring equity, and building a more sustainable gig economy.

Migration for Employment in the Metropolitan City: The Case of Assam Migrants in Bengaluru

Channamma Kambara Assistant Professor, Institute for Social and Economic Change (ISEC), Bengaluru, Karnataka

Malini L Tantri Associate Professor, Institute for Social and Economic Change, Bengaluru, Karnataka

Assam is endowed with numerous natural resources and is home to one of the richest bio-diversities in the world. However, persistent regional imbalances, underdevelopment, huge unemployment rate, poor status of industrial expansion, and natural calamities have hindered the development of the state, forcing people to migrate to other places in search of a better livelihood.

Migration from a unique state like Assam to a metropolitan city like Bengaluru in the hope of better paying jobs is expected to be accompanied by numerous challenges. In this context, the study firstly locates the push and pull factors of migration from Assam to Bengaluru, while understanding how and to what extent migration has helped the respondents achieve their objectives. Secondly, the article tries to understand the perception of migration from the respondents' perspective. Thirdly, it attempts to understand the concept of identity from the respondents' perspective and the ways of retaining it in the destination.

The study is based on both primary and secondary data. Primary data were obtained through a mix of qualitative and quantitative methods, which included focused group discussion, structured interview schedule, and snowball sampling technique.

The findings of the study reveal that migration from Assam to Bengaluru is mainly a rural-to-urban phenomenon and is cyclical in nature and that the economic status of migrants has improved significantly in both in the migrated city as well as in their native. It has also improved their quality of life. The migrants are also exposed to various livelihood opportunities post-migration. The study also shows that these migrants associate identity with their culture. The study further shows that migration has not brought about a major shift in their identity and that they maintain their identity through informal networks by celebrating their festivals and getting together with other fellow members of the state on special occasions.

Intergenerational Mobility in Unorganised Labour Market

Ujjwala Singh PhD Scholar, Centre for Research in Rural and Industrial Development (CRRID), Chandigarh

Informal sector plays a ubiquitous role in the growth of a developing economy. The prevalent view was that the informal sector, which occupied a large space in the economies of the developing countries, would gradually disappear with the enforcement of appropriate policies for the development of the modern sector that provided gainful employment in the formal

sector. However, the contemporary evidence negates this truth. Instead, a voluminous empirical literature suggests that the informal sector is thriving along with the processes of modernisation and industrialisation. While employment in the formal sector has stagnated or at best, increased at a slow rate, the size of the informal sector in many developing countries has increased rapidly.

Theories of the informal sector can be broadly classiﬁed into ﬁve categories namely, Classical/Marxian Approach, Dualistic Approach, Structuralist Approach, Legalist Approach, and Institutionalist Approach. The study of intergenerational mobility in the context of a period of high economic growth accompanied by growing inter-regional inequalities is essential and one inadequately addressed in existing literature. With this understanding, this paper addresses the question that firstly, if there been intergenerational mobility due to growth of informal sector and secondly, if education has impacted intergenerational occupation mobility.

The employment unemployment survey by National Sample Survey Organisation (NSSO) and Periodic Labour Source Surveys (PLFSs) are the most important source of data in this regard. The present study will use NSSO database on employment and unemployment (unit level records) for the 50th (1993-94) and PLFS 2023-24 rounds, respectively. Family records are superimposed on personal records so as to obtain multi-generational data on education, occupation, earnings, etc. A panel data econometric analysis of various parameters is done so as to examine various parameters and their impact on intergenerational mobility in unorganised labour market. The phenomenon of mobility is studied in two dimensions, firstly, inter-generational (affecting several generations) and secondly, intra-generational (occurring during the span of one generation). Both inter- and intra-generational mobility are assessed in terms of different base indicators, including incomes, asset holdings, educational achievement, and occupational status. The results indicate various policy level transformations in times of transitioning economy.

Empowerment of Persons with Disability: A Comparative Analysis of Education and Employment

Tanvi Khandolkar PhD Scholar, CRC Govt College of Arts, Science and Commerce, Sanquelim Affiliated to Goa University, Panaji, Goa

Seema Prabhir Rath Professor, Govt. College of Arts, Science and Commerce Sanquelim Goa, Dicholi, Goa

The empowerment of every individual, especially the persons with disabilities (PwD) is essential by providing increased access to quality education and employment for the sustained growth of a society. Persons with disabilities face several challenges in the path of their empowerment. Right from the time of getting admitted to educational institution till the time they enter labour market, they have to face barriers. Education, though crucial for employment and

empowerment, the PwDs face various challenges in the access to education. Hence, literacy rates among the PwD are lower compared to general population, even though, it is improving. Even in the labour market, the society and employers' stigma and choices create hindrances for them to procure employment. Their participation in the labour market is a critical indicator of social as well as economic well-being. Over the years, various initiatives have been introduced by the Government to enhance the rights as well as quality of life of PwD in India. Yet, gaps are quite visible among PwD and the persons without disabilities.

The present study analyses the educational and work force participation trends amongst the PwD based on gender and region in the state of Goa by using the Census data of 2001 and 2011. The study reveals that there is a slight improvement in educational participation as well as workforce participation amongst the PwD in rural and urban areas, with the dominance of males over female and varying patterns in type of work done. Study also indicates a small presence of children below the age of 14 and older people above the age of 60 in the workforce. Main workers category has been out numbered in urban areas and marginal workers are found more in rural regions showing a seasonal nature of work in the rural areas. The female population is found to be more in the non-working category indicating the presence of gender disparity in employment.

Overall, the study indicates that there is a persistent improvement in educational and employment rates amongst the PwD, even though there is the presence of gaps between literacy rates and employment among genders and locations. Based on the analysis, the paper suggests a targeted policy interventions in education to improve access to education in rural as well as urban areas, along with vocational training, sensitisations, and support measures so as to improve PwD employability towards inclusive development and their empowerment.

Marriage, Motherhood, and Women's Labour Force Engagement: Insights from Ernakulam, Kerala

Arunima Nair Master's Student, Tata Institute of Social Sciences, Mumbai, Maharashtra

Bincy George Assistant Professor, Tata Institute of Social Sciences, Hyderabad, Telangana

The female labour force participation rate (FLFPR), a highly relevant economic variable, is often used as a proxy for gender equality in labour markets across the globe. However, unlike the labour force participation rates for men, the FLFPR has several unique determinants which often prompt the latter to be lesser than the former. Marriage and motherhood are two such factors that have a tendency to constrain a woman's labour force engagement. Several theoretical concepts in connection with the same have been espoused, namely Economics Nobel laureate Claudia Goldin's U-Shaped Hypothesis, which highlights the trends in the labour force participation of married women as well as the Motherhood Penalty, which states that motherhood often disadvantages women as it leads to career setbacks, lower pay and

discrimination at the workplace. The FLFPR in India has historically been abysmally low, often falling below the global average. The south Indian state of Kerala, renowned for having the highest female literacy rates in the country and a favourable sex ratio, has consistently recorded a low FLFPR. This study aims to analyse the impact of marriage and motherhood on the labour force participation of women employed in the formal workforce in the predominantly urban Ernakulam district of Kerala. Using a mixed-methods framework, this paper relies on primary data collected through an extensive, structured questionnaire along with logit regression analysis to formulate a model that analyses the same. In addition, the quantitative analysis is supplemented by two Key Informant interviews to analyse the various socioeconomic determinants of Kerala's female workforce engagement.

Will India's Graduates Work with Artificial Intelligence (AI)—or be Replaced? Systematic Insights into National Education Policy 2020 and the National AI Strategy for Future Labour Market Demand

Supriya Krishnan Assistant Professor, Patna University, Patna, Bihar

Artificial Intelligence (AI) is transforming the global workforce at a fast pace, meanwhile Indian higher education institutions (HEIs) are being increasingly tasked with equipping graduates not only with, technical know-how but also with human-centred skills to interact with the evolving smart systems. This systematic review illustrates how Indian HEIs are addressing the challenges outlined in national policy frameworks of India's National Education Policy (NEP) 2020 and National AI Strategy. The analysis explores the extent to which AI-enhanced teaching in Indian HEIs fosters future-ready capabilities such as creativity, versatility, teamwork, and critical thinking competencies—competencies increasingly in demand in an AI-powered work environment.

The review integrates results from 58 empirical and policy-relevant articles published between 2018 and 2024. Other sources are peer-reviewed journals, government reports, and organisational documents identified through systematic searches in databases such as Scopus, Web of Science, IEEE Xplore and ERIC, and relevant grey literature. Following PRISMA screening processes, the final selection comprises 24 quantitative, 16 qualitative, and 18 mixed-methods studies. The Mixed Methods Appraisal Tool (MMAT) was used to evaluate the methodological quality of each study. Data extraction was focused on key items such as institution type, sample data, AI-related interventions, and targeted specific competencies.

Outcomes indicate that although technical ideas and AI technologies such as machine learning (ML), programming, and data analysis are being increasingly integrated into the curriculum, the majority of HEIs are merely at the initial stage of pedagogical practices aimed at developing non-technical skills for human-AI collaboration. For instance, just 35% of those studies ever talked about creativity or 30% talked about flexibility, and just 55% were even

meant to encourage collaboration. The private and central universities were the most likely to experiment with new AI pedagogies, while state universities and rural universities grappled with poor infrastructure and teaching capacity. Ethical implications—algorithmic bias, data privacy, and digital divide—were addressed in most research but not often translated into curriculum development. This suggests a divergence between the brisk rate of AI technology advancement and the glacial rate of ethical and pedagogical enhancement of Indian HEIs.

To address the gaps, the review does have some strategic suggestions. Firstly, interdisciplinary, AI-driven curricula that go beyond the technical to prioritise socio-ethical awareness and adaptive reasoning should also be established. Capacity-building initiatives are also needed to equip faculties to deliver new AI competences that need to be established. Secondly, there should be robust, longitudinal studies and competency-based assessment systems to test AI-integrated learning models over time. Finally, establishing multi-stakeholder mechanisms involving government, industry, and academia is also necessary to drive innovation and harmonisation of policies. Specifically, the review identifies institutional equity as the intervention point. Under-resourced colleges require support through open-access digital resources, national funding schemes, and inclusive AI education policy to ensure that adoption of AI does not perpetuate existing educational inequalities.

Overall, this review presents a strategic road map for Indian higher education to shift from patchy AI literacy initiatives towards an integrated, future-proof model of learning. By pervading ethical, creative, and collaborative competencies into learning AI, Indian HEIs can prepare graduates not merely to avoid displacement by AI—but to thrive alongside. Artificial Intelligence in an increasingly dynamic work environment.

Impact of Formal Training on Labour Market Outcome: Evidence from India

Nishant Mishra PhD Scholar, Govind Ballabh Pant Social Science Institute, Prayagraj, Uttar Pradesh

Manik Kumar Assistant Professor, Govind Ballabh Pant Social Science Institute, Prayagraj, Uttar Pradesh

The debate of labour market inequality and economic growth in developing economies strongly recognises human capital accumulation. In India, the world's largest youth population resides underemployed and in low-quality jobs, posing a major challenge for realising the demographic dividend. Against this backdrop, formal training programmes are promoted as a vehicle to improve employability and earnings. Yet, the returns after receiving formal training remain underexplored, particularly across age cohorts.

This paper addresses the question: Does formal training lead to higher wages among youth (15–29 years) compared to adults (30–59 years) in India? Age heterogeneity reflects the dual challenge of integrating new labour market entrants while upgrading the skills of adult workers. Moreover, disaggregating wage effects by age can show the right path to explain how

inequalities in access to and returns from formal training may reinforce or mitigate broader patterns of labour market segmentation. The study draws on the latest nationally representative unit-level data from the Periodic Labour Force Survey (PLFS), 2023-24, encompassing 25,847 individuals, those who are regular worker and received formal training. This survey presents a lot of information about jobs, earnings, economic activities, and vocational/technical training, which makes it possible to create strong estimates of the links between training and wages.

The study utilises treatment-effects models inside a causal inference framework to tackle the issue, notably Propensity Score Matching (PSM) and Inverse Probability Weighted Regression Adjustment (IPWRA). This mixed method aids in evaluating whether salary disparities signify actual treatment effects rather than just correlations. Findings show significant raw wage gaps: 0.27 log points for youth and 0.55 for adults. After adjusting for selection, youth wage gains are limited: PSM indicates 0.04 (p=0.058), while IPWRA provides 0.11 (p<0.01). Adults record consistently higher returns: 0.08 (p<0.01) with PSM and 0.19 (p<0.01) with IPWRA. Potential Outcome Means shows average hourly wages of â‚¹65 (youth) and â‚¹95 (adults) for untrained workers, rising to â‚¹71 and â‚¹115, respectively, for trained workers. Overall, evidence points to relatively limited wage effects for youth workers, while adult workers are better positioned to convert training into higher wages, possibly due to their strong labour market connections, interpersonal networking, occupational experience, and bargaining power. These findings suggest the need for complementary interventions—stronger school-to-work linkages, decent formal jobs, aligned curricula, and adaptability to technological change—if India's demographic dividend is to translate into inclusive and sustainable growth.

Global Value Chains and Inequality in Labour Market Outcomes: An industry-level Analysis

Arpan Ganguly Assistant Professor, Azim Premji University, Bengaluru, Karnataka

Anwesha Basu Assistant Professor, FLAME University, Pune, Maharashtra

With the rising importance of trade in intermediate inputs and the fragmentation of global production, participation in global value chains (GVCs) has become central to industrial and trade strategies. However, deeper GVC integration has also intensified developmental challenges, including uneven growth and widening inequality. Existing research largely concentrates on firm-level evidence within countries or broad cross-country aggregates, leaving a gap in understanding sectoral dynamics across economies. In particular, the implications of GVC participation for labour market outcomes in developed and developing economies—especially differentiated by skill level—remain underexplored.

This paper addresses this gap by constructing a novel three-way panel dataset spanning 60 countries from 1995 to 2018, both at the detailed industry level (41 sectors) and at the broad sectoral level (agriculture, industry, and services). Drawing on Trade in Value Added

(TiVA), World Integrated Trading Systems (WITS), International Labour Organization (ILO), and World Development Indicators (WDI) databases, industries have been matched across multiple datasets using the International Standard Industrial Classification of All Economic Activities, Revision 4 (ISIC (Rev-4)) industrial classification. We employ this dataset to examine how GVC integration shapes growth, structural transformation, and employment outcomes, thereby offering new insights into the developmental consequences of global production networks.

Our results confirm the hypothesis that whereas GVC participation is positively linked to increased growth outcomes in both high-income as well as developing economies, its effect on outcome measures like labour share, wages, and informal employment is varied across countries and sectors. Regression estimates show that GVC integration exerts a positive and statistically significant effect on aggregate employment in developed economies and in the full sample, but not in developing countries. Based on existing literature, we address potential endogeneity concerns between trade and developmental outcomes by constructing the following instrumental variable (as a proxy for globalisation) – average foreign value added from the United States, Japan, and Germany embodied in the exports of the industry of three countries in the sample that are closest geographically or in income to the concerned country. Our results remain robust when estimated using Instrumental Variables Two-Stage Least Squares (IV-2SLS) technique.

Delving into the potential channels, we find that whereas GVC participation is associated with an increase in labour productivity in the sample of developing countries only, it has a positive effect on the share of manufacturing in economy-wide value added across all countries. To shed light on the quality and nature of jobs that gain through external integration, we also estimate the effect of GVC participation on share of informal employment. We find that GVCs are associated with an increase in informal jobs, across countries and sectors. Particularly, 1% increase in GVC integration increases the share of informal jobs by 1.4 percentage points (pp.) and 1.3 pp. in the manufacturing and service sectors of developed economies, while it increases by 1.3 pp. and 0.4 pp. in the manufacturing and service sectors of developing countries. Turning our attention to wages, we observe a positive and statistically significant effect on wages (0.8 pp.) only in developed countries, but no statistically significant impact in the full or developing country sample. Similarly, we find that GVC participation reduces labour shares in the full and developing country sample, while the effect is statistically insignificant for developed countries.

A key empirical contribution of the paper is to assess the relationship between GVC participation and skill-specific labour shares. We observe that, wherever statistically significant, GVCs are positively correlated with high-skilled labour share and negatively correlated with medium- and low-skilled labour share. In developed countries, GVCs have a positive impact on high and medium-skilled labour share (although statistically insignificant), but a negative (and statistically significant) impact (0.4 pp.) on low-skilled labour share. In developing countries, high-skilled labour share is positive and significant (0.35 pp.), medium-skilled labour share is negative and significant (0.3 pp.), while low-skilled labour share is positive but insignificantly

different from zero. This points to the rising skill premium between high- and low-skilled labour in both developed and developing nations.

Our results contribute to the literature as follows. Firstly, we observe that along with the positive impact of globalisation on economic growth, its impact on employment and labour shares varies across country and sector types. Accounting for industry-level heterogeneity, we assess how GVC integration is associated with income distribution and inequality, contributing to the ongoing debates on rising job/skill polarisation, informalisation of jobs, and fragmented labour markets in the global South. Secondly, we assess the channels of labour productivity and structural change in this context. Overall, this study attempts to consolidate the scattered empirical contributions in the literature, thereby offering a holistic analysis on the macroeconomic impacts of trade globalisation.

Social Security Inclusion for Informal Workers in India: Context and Prospects

Praveen Jha Conference President 66th ISLE and Professor, Jawaharlal Nehru University, New Delhi
Sonam Rai PhD Scholar, Jawaharlal Nehru University, New Delhi

Despite decades of policy efforts, India's social security architecture remains fragmented and exclusionary, with informal workers who make up nearly 90% of the labour force are largely left outside its ambit. Using evidence from the Periodic Labour Force Survey (PLFS), this paper revisits the paradox of protection in India's labour market. The paper finds that even among the regular wage and salaried (RWS) workers, often considered the most "formal" segment, multidimensional insecurity persists: a large share remains without wage security (paid leave), employment security (written job contracts), and social security benefits (pension, provident fund, health or maternity cover). Moreover, India's official classification compounds this problem, as workers are considered to have social security coverage if they access just one benefit, while very few enjoy the comprehensive set of protections envisaged under international labour standards. This persistent precarity highlights the informalisation of formal employment, raising questions about the feasibility of extending meaningful protection to the vast informal workforce.

Against this empirical backdrop, the paper critically evaluates the Code on Social Security, 2020. Initially envisioned as a transformative consolidation of fragmented legislation, the final version represents a diluted compromise, shaped by competing interests and marked by ambiguity in financing, thresholds that exclude small enterprises, and discretionary provisions for informal, gig, and platform workers. Rather than advancing universalisation, the Code risks reproducing the piecemeal, ad hoc welfare architecture that has historically failed India's most vulnerable workers.

The paper argues that a neoliberal macroeconomic policy regime within which labour reforms have unfolded is fundamentally antithetical to any substantive progress on social security. A genuine inclusion of informal workers requires a rights-based approach to universal social protection, complemented by education and skilling systems that enhance employability and facilitate transitions to formal jobs. Without integrating these dimensions, India risks entrenching a dual economy where the majority remain unprotected, undermining both the promise of inclusive growth and its commitments to the Sustainable Development Goals.

TECHNICAL SESSION 2.10

Are Student Loans Sustainable? An Empirical Analysis of India's Graduate Labour Force

Karthik Manickam PhD Scholar, The New School, New York, United States

Student loans have become the policy response of choice for neoliberal regimes seeking to bridge the gap between financial sustainability and accessibility of the higher education sector. The economic rationale for this draws from human capital theory and assumptions regarding future earnings expectations. However, these approaches have instead culminated in a global university system suffering from unsustainable price increases and financial instability in the face of systemic shocks. Due consideration is often not paid to whether current trends in graduate employment and income levels would actually be able to support such a loan-based system. Recent changes in Indian Higher Education policy have led to discussions as to whether student loans could be used to address funding concerns amid increases in tuition rates.

This paper investigates the impact of introducing a loan-based higher education financial system given short-term panel data from India's Periodic Labour Force Survey (PLFS) and a recently developed copula method to simulate dynamic percentile-based age-earnings profiles. The paper shows that a privatised loan-based system similar to that of the United States would be overwhelmingly unsustainable due to widespread default; only the highest female and male earners would be able to repay their loans. It is further shown that this is true even in a system based on income-contingent loans similar to those used in the United Kingdom; for the vast majority of Indian graduates, life-time earnings would be insufficient to fully repay such a loan, particularly under realistic conditions such as stagnant future wage growth or temporary shocks to income.

These results highlight the inequality of outcome across graduates, the need to evaluate the viability of student loans as a solution to concerns regarding affordability, the limits to human capital theory as a justification for the financialisation of higher education, as well as the need to investigate alternate approaches such as post-Keynesian frameworks of higher education.

Bringing Women at Work to the Forefront: A Four-Axis Feminist Labour Valuation Model for Data Measurement and Policy Reform

Anali Ambani Baruah PhD Scholar, Tezpur University, Tezpur, Assam

Madhurima Goswami Associate Professor, Tezpur University, Tezpur, Assam

Labour valuation frameworks in India have consistently failed to integrate gendered dimensions of data aggregation, particularly in capturing the cultural and relational contexts within which work is performed. This omission obscures how certain forms of women's work and labour are systematically undervalued or rendered invisible in labour statistics and policy discourse. How do we come to associate different values with different labour forms, and how are these values legitimised, regulated, socially constructed, and moralised? This paper addresses these questions by developing a four-axis labour valuation framework: 1) economic measurability, 2) institutional legibility, 3) risk, and 4) respectability – to examine the valuation and devaluation of women's labour in India. While economic measurability and institutional legibility are well-established in existing valuation models, risk and respectability are proposed as novel and necessary axes for understanding gendered labour valuation inter-sectionally.

Grounded in feminist economics and cultural studies, the framework is constructed through a synthesis of empirical data from labour valuation models used in India (Periodic Labour Force Survey–PLFS, Time Use Survey–TUS) and internationally (International Labour Organization), alongside qualitative narratives from independent, second-hand literature on women's work, whose methodologies include PLFS data analysis as well as qualitative fieldwork. Using purposive and maximum variation sampling, the paper applies the framework to these case studies across three categories of women's work: (1) feminised labour, encompassing both paid and unpaid, caregiving, childcare and community-based work; (2) professional and technical pursuits, involving skilled, knowledge-based occupations requiring formal qualifications; and (3) historically male-dominated sectors such as construction, mining, and heavy industry, where women's participation challenges entrenched gendered divisions of labour. The application of the four axes to these diverse contexts demonstrates the framework's capacity to capture the relational, socially embedded nature of labour valuation.

The objective of the paper is to advance labour valuation debates by integrating cultural and moral dimensions into economic and institutional metrics. It provides a diagnostic tool for policymakers to identify system biases in existing labour statistics. In doing so, it reframes the valuation of women's work and labour as not merely an economic measurement challenge but a fundamentally socio-cultural process with direct implications for gender equality in labour markets.

Labour Market Dynamics in Jharkhand: A Quarter Century of Statehood

Santanu Sahu Assistant Professor, Patna University, Patna, Bihar

This paper examines the patterns of labour market discrimination in Jharkhand through the lenses of caste and gender. Since its carving out from Bihar in November 2000, Jharkhand has traversed a complex trajectory of socioeconomic and demographic development. The state, endowed with rich mineral resources, was expected to chart a path of industrialisation-led growth. However, even after 25 years, its labour market reflects persistent caste and gender-based inequalities, stunted structural transformation, and a precarious quality of employment.

This paper critically examines patterns of labour force participation in the state, focusing on women and social groups particularly Scheduled Tribes (ST), and compare it with corresponding all-India figures. All the analysis is based on secondary data obtained from Employment and Unemployment Survey (EUS) for the years 2005-06 and 2011-12, and Periodic Labour Force Survey (PLFS) for 2018-19 and 2023-24. Using logistic and multinomial logistic regression models, the analysis explores the determinants of participation, the structural shift from agriculture to non-agricultural activities, and the evolving nature of employment along with the choice of mode of employment.

Findings reveal that while Jharkhand has shown gradual progress in diversifying employment and raising participation levels, these gains remain unevenly distributed. Scheduled Tribe communities, in particular, continue to face sluggish improvements, compounded by gender disparities, and limited educational opportunities. The study argues that without targeted interventions addressing structural and social barriers in Jharkhand is not possible. The state was formed for the upliftment of tribal group but success still awaits. Demand and supply sides of Jharkhand's labour market needs to be strengthened. Expanded formal, technical, and vocational education uplifts the tribal group which will improve the condition of human capital and augment the supply of skilled labour in the state. Also, demand side should be stimulated through targeted policy action which will attract investment particularly in non-farm sector to absorb the skilled labour and generate superior-quality jobs, thereby improving the standard of living of tribal communities.

An Analysis of Job Volatility and Job Stability among Young Male Workers in India

Shiuli Vanaja Assistant Professor, National Law School of India University, Bengaluru, Karnataka
Yasar Arafath Research Associate, Azim Premji University, Bengaluru, Karnataka

The Indian labour market struggles with unemployment, particularly among educated young people. The purpose of obtaining a good education is to secure employment that can provide

a stable income, along with other benefits. As the number of good-quality job opportunities is fewer in the market, young, educated people face two choices: either to wait for a better employment opportunity or enter employment that they can find and then, over time, shift into better opportunities. It would be interesting and important to understand the job stability and job volatility of young, educated individuals who are already employed in the market. If the goal is to enter permanent salaried work (which can be considered as the better-quality employment), the education status and the trajectories followed by different workers might play an important role in achieving this goal.

This paper examines job volatility and stability among young male workers in India, utilising CMIE Consumer Pyramids panel data from 2017 to 2019 to investigate employment trajectories and switching behaviours that are differentiated by age and education. The study finds that job-hopping is common among young people, with non-graduates exhibiting more consecutive employment spells at younger ages, while graduates tend to experience longer spells as they age. Graduates consistently enjoy greater upward mobility and job stability, particularly in permanent salaried positions, regardless of their frequency of job switching. Frequent job switching significantly reduces the likelihood of upgrading to permanent salaried jobs and sustaining such employment, with initial job type and income serving as strong predictors of later stability. While graduates are generally more likely to experience upward mobility, increasing job switching itself reduces the probability of upgrading for everyone, graduates included. The advantage of being a graduate applies regardless of how frequently job switching occurs, but switching jobs more often does not increase the chances of upward mobility, even for graduates.

Labour Force Participation and Sectoral Transitions: Opportunities for India's Progressive Growth

Chandra Shekhar Kumar Secretary, Government of India, New Delhi
Manoj Sharma Consultant, Government of India, New Delhi

Labour employment is a crucial aspect of economic development and social stability. It encompasses job creation, workforce participation, working conditions, and wages. Sustainable Development Goal (SDG) 8, "Decent Work and Economic Growth," focuses on promoting sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all.

This paper explores the link between labour employment and SDG 8, highlighting key statistics, trends, and challenges. Sustainable Development Goal 8 aims to achieve the following: 1. Sustain per capita economic growth, particularly in least developed countries. 2. Achieve higher levels of economic productivity through diversification and innovation. 3. Promote policies supporting productive activities, decent job creation, entrepreneurship, and

micro, small, and medium-sized enterprises (MSMEs). 4. Improve global resource efficiency in consumption and production. 5. Achieve full and productive employment and decent work for all women and men. 6. End forced labour, human trafficking, and child labour. 7. Protect labour rights and promote safe working environments. 8. Develop policies for sustainable tourism, financial inclusion, and improved global economic integration.

United Nations' Agenda 2030 for Sustainable Development, to which India is also a signatory, includes SDG 8 highlighting its importance in economic growth and poverty reduction. In this context, globally, 0.36 percentage point increase in labour force participation rate (LFPR) over the period of five years from 2019 to 2023 also observed a corresponding increase of 0.4 percentage points in gross domestic product (GDP) growth rate. This change was more pronounced in India with 4.10 percentage points increase in LFPR and correspondingly, 3.9 percentage points increase in GDP during these years. As per the Periodic Labour Force Survey (PLFS 2025), India's LFPR for persons aged 15 years and above is 54.2%, translating to approximately 640 million individuals in the labour force out of an estimated 1.18 billion working-age population. Rural LFPR stood at 56.1% (roughly 440 million), while urban LFPR was 50.4% (about 200 million). India's total population is estimated at 1.464 billion in mid-2025. At the global level, the population is around 8.1 billion, with global LFPR ranging from 60% to 70%, equating to nearly 5 billion people in the labour force. These figures underline India's strong demographic base and the growing opportunity to expand inclusive and productive employment across both rural and urban sectors.

Whereas, the labour force is a significant contributor to the global economy, labour rights with decent working conditions are also integral to the social and economic development of an individual. While SDG 8 emphasises the term 'decent work' for progressive economic growth, International Labour Organization (ILO) describes 'decent work' as the one with fair income, workplace security, social protection, freedom of expression of concerns, and gender equality . For realising the concept of 'decent work' into practice, existence and implementation of labour laws are very important. The significant catalyst for creation of labour laws was the Industrial Revolution resulting in unfair working conditions, including long hours, low wages, child labour, and unsafe workplaces . This was also a significant reason for establishment of ILO in 1919 and subsequent framing of 'The Declaration on Fundamental Principles and Rights at Work of International Labour Organisation' (1998, amended in year 2022) guided by five principles vital for social and economic lives of people namely, (i) freedom of association and right to collective bargaining, (ii) elimination of all forms of forced or compulsory labour, (iii) abolition of child labour, (iv) elimination of discrimination at workplace; and (v) safe and healthy working environment.

Another important aspect of decent work is gender equality which is crucial for economic growth and sustainable development. United Nations has highlighted that by the year 2025, global annual GDP could increase by 26%, equivalent to US$28 trillion, if women assumed roles in labour markets identical to men. However, presently, women's share in global employment market is 39.7% and only 27.5% in management level positions (2022). In India, the PLFS report

(2022-23) shows that for every 100 males, there are only around 19 females working at senior level positions in an organisation.

According to the ILO, job quality encompasses the overall conditions of employment that affect a worker's well-being, security, and satisfaction. It goes beyond wages to include fair pay, safe conditions, job stability, skill growth, and access to rights and protections. Quality jobs promote not only productivity but also health, dignity, and future security, and are measured through both objective indicators and subjective perceptions, making them vital for inclusive and sustainable employment. Beyond the LFPR and quality of jobs, another concerning aspect is gender pay disparity. As per UN Women data, globally, women only make around 77 cents for each dollar men earn. This is a critical issue because as per India Employment Report (2024) published by ILO, main reason for choice of employment for 50.7% women in India is good salary, which is mostly a universal aspect. Also, the labour force is engaged in various economic sectors such as primary sector (e.g., agriculture, fishing, mining), secondary sector (e.g., manufacturing, construction), and tertiary sector (e.g., education, IT, banking). Analysis of its evolution over time is critically important to come out with practicable policy recommendations to increase LFPR in a realistic timeframe.

Replicating Tamil Nadu's Women Centric Employment Model: Policies, Culture, and Pathways for Bihar, Haryana, and Lagging States

Shirish Kulkarni Assistant Professor, Symbiosis International University, Pune, Maharashtra
Gungun Jain PhD Scholar, Symbiosis International University, Pune, Maharashtra
Pranesh Raam GK Master's Student, Symbiosis Law School, Pune, Maharashtra

This research paper focuses on the female labour force participation (FLFP) rate, the sole measure of women's empowerment. It examines the Tamil Nadu Model, developed and progressing through the government-launched policies and gains in the FLFP, differentiating between the quality and quantity of women's empowerment. The paper lays down Tamil Nadu's social reform movements and initiatives led by the government that established a great pillar in women's empowerment and increased labour force participation. However, the growth is mainly concentrated in the informal and precarious sectors, which have yet to be worked upon.

Through the comparative analysis with the lagging states such as Bihar and Haryana, this research highlights the foundational strategies of Tamil Nadu, from its social scaffolding during the colonial era to its post-independence policy initiatives. This study dissects Tamil Nadu's fundamental strategy. We examine whether these regulations have promoted upward occupational mobility or only increased the number of vulnerable women workers. Through an examination of women's shift from subsistence-level micro-entrepreneurship, specifically in the context of self-help groups (SHGs), to formal, salaried employment, this paper aims to

identify specific policy levers that other states could adopt and replicate to develop a more resilient and equitable female workforce.

The discourse surrounding women's participation in the workforce is built upon a century of international and national efforts to codify principles of social justice and gender equality. The foundation of the modern labour rights framework can be traced to the conclusion of the First World War and the establishment of the International Labour Organization (ILO) under the Treaty of Versailles in 1919. The treaty's preamble recognised that universal peace could only be achieved based on social justice, identifying women's protection, and providing an adequate living wage as urgently required improvements. Article 427 of the treaty further elaborated on this, outlining nine methods and principles of "special and urgent importance." Central among these was the seventh principle: "that men and women should receive equal remuneration for work of equal value." This principle, born from recognising women's contributions during the war and feminist lobbying, marked a pivotal moment in embedding gender equality into the architecture of international law. This foundational idea evolved over the subsequent decades. Prodded by the United Nations, the ILO adopted the Equal Remuneration Convention (No. 100) in 1951. This landmark instrument provided a clear definition of "remuneration". It obligated member states to promote and ensure "the application to all workers of the principle of equal remuneration for men and women workers for work of equal value." The convention established a global standard, moving the concept from a guiding principle to a formal international legal obligation.

In India, the struggle for women's rights was deeply intertwined with the broader movements for social reform and national independence. The first phase of this effort, beginning in the mid-19th century, was primarily initiated by male social reformers who challenged customs like *sati* and child marriage while advocating for widow remarriage and women's education through organisations like the Brahmo Samaj and Arya Samaj. By the early 20th century, women began forming national organisations and incorporating their goals into the freedom struggle. Women's groups campaigned for political rights, leading to the Government of India Act 1935, which expanded the franchise and enabled women to hold public office, laying the groundwork for the principle of universal adult franchise that would follow independence. The legacy of these pre-independence movements profoundly shaped the constitutional framework of the newly independent nation.

The Constitution of India, adopted in 1950, did not merely grant equality but created a mandate for proactive state intervention to advance women's rights. This is enshrined in the Fundamental Rights, which guarantee equality before the law (Article 14), prohibit discrimination on the grounds of sex (Article 15(1)), and ensure equality of opportunity in public employment (Article 16). Crucially, Article 15(3) empowers the State to make "any special provision in favour of women and children," providing the constitutional basis for affirmative action. Furthermore, the Directive Principles of State Policy guide state action towards securing an adequate means of livelihood for men and women equally (Article 39(a)), ensuring equal pay for equal work (Article 39(d)), and making provisions for just and humane conditions of work and maternity relief (Article 42).

This robust international, historical, and legal framework provides the essential backdrop against which the contemporary realities of women's employment in India must be analysed. Despite these comprehensive protections, a profound disconnect exists between these *de jure* guarantees and the *de facto* labour market outcomes for millions of Indian women.

This paper will argue that the state of Tamil Nadu, despite its own complexities, offers a superior and more instructive development pathway compared to other states. The "Dravidian Model" of governance in Tamil Nadu has historically combined rapid economic growth with strong social development, creating a supportive ecosystem for women's employment through targeted policies in education, skill development, and infrastructure, such as working women's hostels. This has resulted in the state becoming an industrial powerhouse, employing nearly half of India's female factory workers and achieving a significant sectoral shift of its female workforce away from agriculture and into manufacturing and services. However, the Tamil Nadu model is a complex case study in qualitative advancement, not a simple success story. Recent academic analysis reveals that the state exhibits an "inverted U-curve" for female labour supply, where participation rates for young women have declined even as the state's economy has grown. This paper posits that this trend, contrary to being a negative indicator, signals a more mature stage of development. It suggests that rising household incomes and greater educational attainment enable young women to strategically defer entry into low-skill jobs to pursue higher education, aiming for better long-term career prospects. By examining this model in contrast to the quantity-driven, low-quality employment surge in states like Bihar and the mixed outcomes in Haryana, this study seeks to deconstruct a more nuanced and sustainable path toward genuine economic empowerment for women in India.

Degrees without Destination: The Compound Effect of Gender and Migration on Education-Occupation Mismatch in the Indian Labour Market

Indrajit Bairagya Associate Professor, Institute for Social and Economic Change, Bengaluru, Karnataka, Associate Professor & Head, Centre for Human Resource Development, Institute for Social and Economic Change (ISEC), Bengaluru

The existing literature on education-occupation mismatch has uncovered the different ways an individual can face mismatch in his or her work, namely vertical and horizontal skill mismatch. The studies related to vertical skill mismatch have highlighted the issue of overeducation, where the educational qualification or the skill of an individual exceeds the requirements of the job, resulting in diminished expected returns from education. Overeducation not just leads to wage penalty, and inefficient use of human resource, but also the dissatisfaction that comes with it. The incidence of overeducation has emerged as a critical issue in India's employment

discourse. Although the issue is discussed around the world, it would be interesting to note its interaction with migration and gender, an under researched area in academia. Therefore, the present study investigates the phenomenon of education-occupation mismatch among migrant and non-migrant workers in India, with a special focus on gender.

Utilising data from the Periodic Labour Force Survey (PLFS) 2020-21 and employing bivariate probit regression analysis, we measure the likelihood of being overeducated. The variable overeducation is being constructed following the realised matching method, where we proxied the educational attainment by the number of years of formal schooling, and the required education is estimated using the mean and one standard deviation of educational levels within 3-digit occupational codes based on NCO-2004. Our analysis reveals critical insights into whether migration mitigates skill mismatch, accounting for worker heterogeneity. The results suggest strong significant difference, when the key explanatory variable was interacted with gender variable, under different specifications outcomes. While migration in general helped mitigate overeducation, it increased the mismatch for female-migrants. Furthermore, individuals with vocational and technical education were found to reduce the likelihood of mismatch, compared to those with general education alone. It underscores the need for policies that align the supply of educational qualifications with evolving labour market demands to minimise education-occupation mismatches and better harness the country's demographic dividend.

Gender Wage Inequality in India: Trends, Determinants, and Decomposition Analysis

Rashi Jain PhD Scholar, Gokhale Institute of Politics and Economics, Pune, Maharashtra

K. S. Hari Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Despite decades of policy reforms and rising awareness of gender equality, the gender wage gap in India remains a deeply entrenched issue, rooted in structural inequities and labour market discrimination. This study examines the persistence, evolution, and underlying drivers of gender-based wage disparities among salaried workers in India over a four-decade period (1983 to 2024). Employing nationally representative data from the NSSO Employment and Unemployment Surveys (EUS) and the Periodic Labour Force Surveys (PLFS), the research applies Blinder Oaxaca and John Murphy Pierce wage decomposition methods to quantify the explained (due to education, experience, etc.) and unexplained (often interpreted as discriminatory) components of the wage gap. Three principal research dimensions guide the analysis: the extent of the gender wage gap over time, the factors explaining it, and whether women are trapped at the bottom ("sticky floor") or blocked from advancing to the top ("glass ceiling").

The data reveals a dynamic trajectory: the gender wage gap stood at 47.71% in 1983–84 but improved significantly post-liberalisation, peaking at 67.0% in 2020, marking substantial progress toward parity. However, this trend reversed in recent years, with women's wages declining to 63.0% of men's by 2023, suggesting emerging challenges in sustaining earlier gains. The gap is driven by differential returns to education, experience, and occupational segregation, with evidence of both sticky floor effects among low-income women and glass ceiling barriers for high-skilled women. The analysis also reveals significant intersectional vulnerabilities, married women belonging to Scheduled Caste (SC)/Scheduled Tribe (ST) and minority backgrounds. Notably, even when women have similar or better qualifications than men, large unexplained wage differences persist, particularly in leadership and technical roles. The study concludes that economic growth alone is insufficient; resolving the gender wage gap in India requires coordinated policy reforms targeting education, labour regulation, corporate governance, and social norms, all through a gender sensitive lens.

Assessing Decent Work Status among Workers in the Textile Industry: A Study of Major States of India

Anukriti Negi PhD Scholar, Banaras Hindu University, Varanasi, Uttar Pradesh

This study examines multidimensional assessment of employment quality in India's textile sector. Using unit-level data from the Periodic Labour Force Survey (PLFS) 2022–23, the study constructs a composite Decent Work Index (DWI) across three dimensions: employment status, employment opportunity, and social security. A total of 11 variables are used to capture decent work conditions among textile workers in 9 major Indian states.

The findings reveal considerable regional disparities in employment quality, with none of the states crossing the threshold of adequate decent work conditions. States like West Bengal, Maharashtra, and Tamil Nadu perform relatively better, while Uttar Pradesh and Jammu & Kashmir lag significantly behind. The study identifies social protection particularly access to paid leave, written contracts, and social security schemes as the weakest and most neglected component across all states. The findings also reveal that education, skill training, and employment in formal enterprises significantly improve decent work outcomes. Conversely, workers from socially disadvantaged groups (Scheduled Castes), female workers, and those in informal enterprises face disadvantages. The structure and ownership of the enterprise also play a significant role; workers in public-private companies or female-led firms are better in terms of decent work.

The state-wise classification into high, moderate, and low-performing categories uncovers structural and institutional differences in how decent work is realised. In high-performing states, education and enterprise formalisation drive better outcomes, while in low-performing

states, caste-based exclusion and lack of institutional support remain persistent barriers. The study recommends differentiated policy strategies: high-performing states should focus on bridging gender gaps and strengthening labour rights; moderate-performing states need to scale up enterprise formalisation and improve skill infrastructure; and low-performing states require targeted interventions for social inclusion, skill development, and informal sector integration.

Despite data limitations, especially in measuring labour rights and social dialogue, the study contributes to the growing discourse on informal labour and employment quality in India. It emphasised the need for both state-level and national reforms to advance the decent work agenda in one of India's most labour-intensive industries.

TECHNICAL SESSION **2.11**

Educational Attainment and the Nature of Employment in India: A Case Study of Suburban Kolkata, West Bengal

Swagota Saha Assistant Professor, Maharaja Srischandra College, Kolkata, West Bengal

Education plays a pivotal role in shaping economic growth, enhancing social mobility, and improving individual well-being. In India, it is often seen as a primary driver of employability and income security. Despite substantial progress in educational attainment over the past decades—reflected in rising literacy rates and higher gross enrolment ratios—the translation of educational gains into quality employment remains uneven. This study examines the relationship between educational attainment and the nature of employment in suburban areas of Kolkata, West Bengal, with particular attention to socio-demographic and structural determinants.

Using primary survey data from 160 respondents across 4 municipalities, an ordered logit regression model was done to analyse how age, gender, social group, religion, marital status, and education level influence the likelihood of obtaining higher-quality employment, categorised as unemployed, temporary, contractual, and permanent jobs. The model was statistically significant (LR $\chi^2(11)$ = 32.92, $p < 0.001$) with a Pseudo R^2 of 0.1326, indicating that the explanatory variables collectively have a meaningful impact on employment outcomes.

Results reveal that age has a positive but diminishing effect on job quality, suggesting benefits from experience up to a threshold beyond which opportunities decline. Interestingly, males in this sample had significantly lower odds of securing better job types than females, a deviation from typical labour market patterns. Social group membership also mattered: respondents from the General category were less likely than Other Backward Classes (OBCs) to hold better-quality jobs, while caste-based disadvantages for Scheduled Caste (SC) and Scheduled Tribe (ST) groups were not statistically significant. Marital status was positively associated with employment quality, implying potential benefits from social stability and networks. Educational attainment showed complex effects. Graduates had a marginally positive association with better job types, whereas postgraduates and above faced a slight disadvantage compared to those with only higher secondary education—highlighting possible overqualification and skills–jobs mismatch. Religion had limited but notable influence, with Hindus exhibiting marginally lower odds of favourable employment than Muslims.

The findings underscore that in the studied region; education alone does not guarantee higher-quality employment. The outcomes are mediated by socio-demographic factors and labour market structures. The persistence of educated unemployment, overqualification, and informal sector dominance points to a disconnect between educational supply and market demand. Policy recommendations include enhancing the alignment of curricula with labour market needs, promoting mid-career reskilling, expanding industry–academia partnerships, and designing inclusive employment strategies that address structural barriers across social and demographic groups.

By focusing on a micro-level case study within a broader national context, this paper contributes to the discourse on India's education–employment nexus, offering evidence-based insights for policy frameworks aimed at converting educational progress into equitable and sustainable employment opportunities.

Quality of Employment and Decent Work Deficit in the Ship Breaking Industry

Hrudanand Gunanidhi Misra Professor, Nirma University, Ahmedabad, Gujarat

Rasmita Nayak Assistant Professor, Nirma University, Ahmedabad, Gujarat

The ship breaking industry, particularly in developing countries such as India, Bangladesh, and Pakistan, occupies a paradoxical space in global industrial development. It serves both as a critical source of raw materials—especially recycled steel—and a livelihood provider for thousands of informal and migrant workers. In India, the Alang ship recycling yard in Gujarat stands as one of the world's largest ship breaking sites, employing approximately 30,000 workers at its peak. Despite its economic significance, the industry is often criticised for poor working conditions, environmental hazards, and systemic denial of basic labour rights.

This paper seeks to critically examine the quality of employment and the decent work deficit in the ship breaking industry, using Alang as a case study. The study is based on both primary data collected through structured interviews with 300 workers at Alang and secondary sources including reports from the Gujarat Maritime Board (GMB), International Labour Organization (ILO), and academic studies. The paper evaluates employment quality based on the ILO's Decent Work Agenda, which includes four key pillars: (1) productive employment, (2) rights at work, (3) social protection, and (4) social dialogue. The study reveals that while the industry offers relatively higher daily wages than rural agricultural employment, this economic advantage is undermined by the absence of formal employment contracts, the lack of job security, minimal upward mobility, and unsafe working environments. The workers, mostly migrants from economically backward regions such as Uttar Pradesh, Bihar, Odisha, and Jharkhand, engage in hazardous roles including gas torch cutting, asbestos removal, and heavy material handling—often with minimal protective gear or training. Informality remains

the defining characteristic of employment in this sector. Over 90% of workers reported being hired through middlemen or labour contractors without any written contracts, which leaves them vulnerable to exploitation and abrupt job termination. Most workers are employed on a daily wage basis, earning between â,¹350 to â,¹500 per day, with no assurance of continuity during off-seasons or global downturns in ship supply.

The occupational health and safety (OHS) standards at Alang, although marginally improved in recent years due to regulatory pressure and non-governmental organisations (NGOs) intervention, still fall short of global norms. Frequent accidents, including fatal injuries and long-term exposure to hazardous substances such as asbestos, polychlorinated biphenyls (PCBs), and heavy metals, are commonplace. The lack of systematic medical screening, accident reporting, or compensation further exacerbates the vulnerability of the workers. In terms of social protection, the situation is deeply concerning. Very few workers are enrolled in Provident Fund (PF), health insurance, or pension schemes. Welfare boards, where functional, are underutilised due to workers' lack of awareness and the transient nature of their employment. Housing conditions in surrounding areas are substandard, often characterised by overcrowding, poor sanitation, and limited access to potable water and electricity. The absence of collective bargaining mechanisms or active trade union presence is another critical aspect of the decent work deficit. Workers fear reprisals or loss of employment if they raise concerns about wages, safety, or working hours. Most grievances are mediated informally through contractors, leaving little scope for legal recourse or structured negotiation. The decent work deficit in the ship breaking industry reflects a deeper tension between industrial competitiveness and labour rights. While the Gujarat Maritime Board and Gujarat Ship Breakers Association (GSBA) have introduced guidelines for compliance, enforcement remains weak due to fragmented regulatory oversight, overlapping jurisdictions, and the informal nature of the workforce.

Socioeconomic Profile of Construction Workers in Lucknow, Uttar Pradesh

Shyam Narayan Bharti PhD Scholar, Tata Institute of Social Sciences, Mumbai, Maharashtra

The construction sector remains next to agriculture in employment generation in the country. The sector employs 36.12 million workers. However, the workers face various challenges including economic distress and social insecurity. These issues add to their struggle for survival. The present study examines the context of vulnerability and the adaptation strategies of construction workers in Lucknow, Uttar Pradesh.

Small cities are emerging as centres of construction activities with focus on infrastructure and urban amenities. However, most of the studies in construction workers focused on large cities and metros such as Delhi, Bengaluru, and Mumbai etc. There is very little research on

construction workers in small cities and towns in India. It is important to understand the working and living conditions of construction workers and the associated challenges in this ecosystem. This research study significantly contributes to the existing body of knowledge as it bring new dimensions of vulnerabilities and the struggles for the survival of the workers. A particular focus is on the post-COVID-19 context. The study combined quantitative and qualitative methods consisting of survey, qualitative interviews (narrative method), focus group discussions (FGDs), and observations. The data were collected through structured questionnaires and observation, FGDs, and qualitative interviews (narrative method) within 32 labour mandi in Lucknow, Uttar Pradesh. The study used stratified random sampling to identify the sample of construction workers, with a sample size of 363 respondents for quantitative data analysis. In the qualitative study, 56 participants were interviewed (narrative method) and 15 FGDs were conducted for capturing their lived experiences. The research design is descriptive and exploratory.

The study reveals the socioeconomic conditions of construction workers in day to day working and survival life. They face financial struggles, discrimination, exploitation, sexual harassment, assault, violence, and mental health issues. Many workers are male and migrate to cities for work, facing low income, irregular work, and indebtedness. The post-COVID-19 pandemic has worsened these issues, leading to poor working conditions and demoralisation. Workers engage in protest rallies demanding daily wage and work, seeking support from relatives, friends, and neighbours. They develop tolerance, patience, and adaptability to cope with their struggles. The study highlights the importance of public distribution systems and the Kisan Credit Card (KCC) for agricultural land-owning workers.

Structural Transformation and Fertility Outcome in Maharashtra: A Proper Index for a Precise Outcome

Soumalya Ghosh Independent Researcher, New Delhi

This paper examines the relationship between structural economic transformation and fertility decline in Maharashtra, India. Using district-level data from National Family Health Survey (NFHS)-2 (1999) and NFHS-5 (2019), along with Census data from 2001 and 2011, the study constructs a Structural Transformation Index (STI) to measure the shift from agrarian to industrial and service-based economies. The research addresses a critical gap in demographic literature by isolating structural transformation as a distinct driver of fertility decline, moving beyond conventional approaches that treat fertility reduction as merely a byproduct of general socioeconomic development. The STI incorporates stock and flow components, capturing baseline occupational distributions and subsequent sectoral labour shifts weighted by productivity differentials across sectors.

The analysis reveals a strong inverse relationship between structural transformation and fertility rates, particularly in urbanised and service-driven regions such as Mumbai and Pune.

However, fertility decline is not uniform across the state—tribal and rural districts exhibit slower reductions despite some economic changes. While national trends are documented, region-level heterogeneity in Maharashtra remains under-explored regarding how structural transformation directly affects fertility when controlling for confounding factors. The research highlights Gadchiroli, a tribal district that experienced significant fertility decline despite limited structural transformation. This pattern is attributed to targeted public health interventions, specifically the community-based neonatal care model developed by Drs. Abhay and Rani Bang. The "Abhay Bang effect" demonstrates that improved child survival rates can independently drive fertility reduction by altering family size preferences, even without economic restructuring.

The findings underscore that while structural transformation drives demographic change, its effects are mediated by regional disparities, gender norms, and institutional factors. Policymakers must recognise the need for region-specific combinations of economic development and targeted investments in reproductive health, education, and gender equity in order to deliver inclusive and sustainable demographic transitions. This paper builds on the existing literature by exploring the significance of sub-national analysis, as well as the mixed-methods approach that allows for a richer understanding of the complexities of reproductive behaviour in a diverse country like India.

Demographic Dividend and Employment in India: An Empirical Study on Growth Dynamics

Nikhil Dev PhD Scholar, University of Madras, Chennai, Tamil Nadu

R Saritha Assistant Professor, University of Madras, Chennai, Tamil Nadu

Economic growth targeted for each year has a real significance with demographic dividend. Demographic dividend is the potential for accelerated economic growth that arises when a country experiences a shift in its population age structure. This usually happens when the working-age-population grows relative to the non-working-age population. The following factors that are determined by the demographic dividend are the: fertility rates and mortality rates, investment, savings, labour force. Demographic dividend occurs during a country's demographic transition, which is a shift from high to low fertility and mortality rates. This transition can last 20-30 years.

The main purpose of this analysis is to study the correlation between demographic dividend and employment. The issues concerning the demographic dividend in India are low skill level, jobless growth, poor education quality, gender inequality, informal economy dominance, accessibility to health care, and regional disparities. The major issue being "skill gap and poor human capital". This issue is commonly faced by the youthful population. This issue gives a deep impact on the lack of Job- relevant skills.

In identifying the research problem on this subject is to analyse the gaps in education, health, skill development, and employment generation. Demographic dividend is a windfall of an outcome, which explains that the economic growth that results in a change in the country's age structure with declining mortality and fertility rates, which expands the working population. Demographic dividend can increase savings, expand the work force, increase in human capital, and drive growth rate.

The motive behind this study is to study employment with regards to harnessing the demographic dividend. Youth unemployment is on the rise, the research question that kept arising in this study is how the demographic dividend can reap the rewards of its incentives and to bridge the gap of disguised unemployment.

Invisible Labour and Education in India: A Time-Use Data Analysis of Women's Unpaid Work in Rural and Urban India

Sreejith S PhD Scholar, Central University of Kerala, Kasargode, Kerala

The present study conducts a disaggregated analysis of the invisible unpaid work and education level in India, particularly emphasising gender dynamics. A large portion of women are engaged in unpaid activities, which are very much essential for enhancing social wellbeing. However, the immense contribution of unpaid work is excluded from the formal economic measures, such as the labour force and national income estimation. Education stands as a pivotal force for improving employment and output in the economy. The existing studies have mainly focused on the role of education in improving labour market participation. Due to the invisible nature of unpaid work, labour market analysis has neglected the importance of unpaid work.

In this context, the present study explores the interlinkage between unpaid work and education level based on time-use data. Time Use Survey data is an innovative tool for understanding the significance of unpaid work in the economy. The study used India's Time Use Survey 2019 data for the analysis, selecting a sample of 445170 individuals comprising 226644 males and 218526 females. The gender disparity in time allocation is estimated by examining the average time spent on unpaid activities across different levels of education. Further, a multiple regression model is applied to examine the role of education on unpaid work.

The findings challenge the assumption that getting more education decreases women's unpaid work burden. The data reveal that women's higher educational attainment does not tend to reduce the burden of unpaid work. However, men exhibit a downward trend in the burden of unpaid work with the rise in education level. However, disaggregated data show a contrasting trend of unpaid work, including care work, production of other services and own production, with changes in the level of education. A positive trend is observed between care work and education level regardless of gender in rural areas. In urban regions, women's care work increases with a rise in education level, but data does not exhibit a statistically

significant result for men in urban areas. At the same time, educational attainment reduces the participation of men in the production of other services. In contrast, women's time allocation on the production of other services remains substantial, despite a rise in the education level. It suggests that education level does not significantly reduce women's burden on the production of other services in India. Conversely, the third category of unpaid work, own production, falls with a rise in education level, irrespective of region and gender.

The overall analysis derived from the model also highlights the influence of control variables included in the model. The findings show that land size, marital status, employment status, religious affiliation, and social group play a vital role in women's unpaid work. In contrast, household expenditure and size do not substantially impact unpaid work in general. However, household size affects the unpaid work of both men and women within urban areas.

Crossing the 50 percent Line: Evidence of a Cliff in Wives' Earnings Shares in Indian Marriages

Meenakshi Sharma Assistant Professor, Guru Gobind Singh Indraprastha University, New Delhi

This study investigates the distribution of women's share of household earnings in urban India to determine if couples systematically avoid situations where a wife's income surpasses her husband's. Such avoidance would manifest as a "cliff"—a sharp, discontinuous drop—at the 0.5 mark in the density function of the wife's earnings share. Using nationally representative data on dual-earner couples from the Indian Periodic Labour Force Survey (PLFS) for 2023-24, we find robust evidence of this phenomenon, aligning with findings from other countries and suggesting the strong influence of a "male-breadwinner" norm.

Our primary methodological approach employs the McCrary (2008) density test, which confirms a large and statistically significant discontinuity precisely at the 50% threshold. The validity of this finding is reinforced through placebo tests at non-salient points (0.45 and 0.55), where no such breaks are observed. A detailed comparison of households on either side of this cliff reveals that the discontinuity is not merely an income phenomenon but correlates with significant differences in household characteristics. Specifically, as wives cross the 50% earnings threshold, we observe a decline in fertility, a drop in husbands' average income, and a marked increase in wives' technical education and earnings. Furthermore, women who out-earn their husbands are more concentrated in professional occupations, such as teaching and health, and less likely to be in manual or craft-related trades.

Heterogeneity analysis reveals that the cliff is most pronounced in couples where both spouses share the same employment status, particularly as regular salaried employees or as casual labourers, and is strongest among younger couples (ages 25-35 years). A significant cliff persists even among couples where both partners are college-educated, indicating that higher education does not fully erode traditional gender norms.

To further explore the drivers of this pattern, we estimate a logit model. The results show that the probability of a wife out-earning her husband is negatively associated with the husband's income and educational attainment but is strongly and positively associated with the wife's own human capital—her general and technical education—and her age.

Taken together, our findings highlight a fundamental tension between women's increasing economic empowerment and the persistence of patriarchal norms in India. The cliff at the 50% line represents a critical behavioural threshold where social identity costs appear to reshape labour supply decisions, household bargaining, and marital dynamics.

Education, Informality, and Gendered Labour: Understanding Women's Self-Employment in West Bengal

Namrata Singha Roy Assistant Professor, Christ University, Bengaluru, Karnataka

The Indian labour market has undergone profound structural changes in recent years, particularly in the context of women's employment. While female labour force participation (LFPR) has shown an upward trend as per the Periodic Labour Force Survey (PLFS 2023–24), it continues to remain below global standards, reflecting deep-rooted gender inequities. A striking feature of women's work in India is their heavy dependence on self-employment, often within informal, low-wage sectors such as agriculture, household-based manufacturing, and small-scale trade.

In West Bengal, this trend is even more pronounced: nearly 68.5% of women are self-employed, with a majority engaged as own-account workers or unpaid helpers in household enterprises. Such dependence on informal and vulnerable forms of work underlines the intersection of education, labour market segmentation, and gender disparities. This study examines self-employment among women in West Bengal by exploring sectoral and occupational concentration, the role of education, and age-related differences in earnings and working hours.

Drawing on unit-level data from PLFS 2023–24, the analysis highlights that women remain clustered in agriculture and low-value manufacturing activities, with negligible participation in high-skill, knowledge-intensive sectors such as finance, professional services, and technology. The findings reveal that education significantly influences the type and quality of self-employment: women with secondary or higher education are more likely to become employers rather than unpaid helpers. However, the relationship between education and income demonstrates diminishing returns. While basic education generates substantial improvements in earnings, higher education does not guarantee commensurate wage gains, largely due to structural barriers such as lack of credit, skill mismatch, and concentration of women in low-productivity occupations. Age-cohort analysis further illustrates the heterogeneity of women's self-employment. Younger cohorts (15–29 years) overwhelmingly engage in own-account

work in manufacturing and education-related activities, while adults (30–59 years) dominate in agriculture, food processing, and retail trade. Elderly women, in the absence of pension coverage, often continue in self-employment out of necessity, primarily in agriculture and small trade. Employers—though a small fraction of the female workforce—show rising wages with age, indicating the role of experience, social capital, and long-term business stability. Yet, most women remain trapped in low-paying informal work, with unpaid household helpers forming a disproportionately large share compared to men.

The findings underscore three critical insights. Firstly, education acts as a gateway for women to move away from unpaid work, but its economic returns are constrained by labour market structures. Secondly, age and experience matter: older employers capture higher earnings, but the majority of women in own-account work see limited wage mobility. Thirdly, systemic barriers—financial exclusion, unpaid care burdens, and lack of institutional support—continue to restrict women's transition into productive self-employment or formal employment.

The paper argues for comprehensive, gender-responsive labour policies that integrate education, skill development, and social security with entrepreneurship support. Strengthening women's economic agency requires not only expanding access to finance and markets but also ensuring institutional reforms that reduce unpaid care responsibilities and create pathways into higher-value sectors. By situating women's self-employment within the broader debates on education, employment, and labour markets, this study contributes to ongoing policy dialogues on inclusive growth and gender equality in India's labour economy.

Public Funding and Education Inequality in India: A State Level Analysis

Tanusree Dash Associate Professor, Kamala Nehru College, University of Delhi, New Delhi

Sukanya Bose Associate Professor, Azim Premji Univesity, Bhopal, Madhya Pradesh

Ananya Ghosh Dastidar Professor, University of Delhi, New Delhi

Education is one of the most powerful tools that can be used to achieve sustainable development. Earnings, development, and opportunities for advancement are all boosted by education. The current paper tries to examine the trends of public education expenditure across states and Union Territories (UTs) along with the association between public education expenditure and educational inequality. The analysis of data on education expenditure as a percentage of gross domestic product (GDP) in India implies a nearly stagnant public education spending in India. However, the per capita public expenditure is found to have increased between 2007-08 and 2017-18. The correlation among the per capita public education expenditure of states/ UTs in 2007-08 and 2017-18 with Education Gini index (EDUGINI) (2017-18) are found to be significant at 1% level of significance. The correlation coefficients are found to be -0.574 and -0.495, respectively indicating a high negative association between the two. Additionally, actual

expenditure to total requirement on elementary education with inequality in educational attainment is also found to be significant at 1% and the correlation coefficient is found to be -0.473. Per capita public education expenditure and percentage of actual expenditure to total requirement on elementary education are also found have a significant association with EDUGINI.

The analysis revealed that public expenditure on education has a lagged effect on educational inequality. The economic status of the states are found to be associated with the per capita public expenditure on education. The per capita public expenditure on education is found to be invariably higher in rich states with few exceptions. The rich state/UTs such as Goa, New Delhi, Sikkim, Chandigarh, Haryana, Gujarat, Maharashtra, and Kerala, are found to have high per capita public education expenditure and low educational inequality. On the contrary, the poorer state/UTs that is Bihar, Uttar Pradesh, Jharkhand, Manipur, Chhattisgarh, Assam, Madhya Pradesh, Nagaland, Odisha, Rajasthan, and Meghalaya, are found to have low per capita public education expenditure and high educational inequality.

TECHNICAL SESSION **2.12**

Inequality and Skill-Based Public Policy: Insights from the JEEViKA Programme in Bihar

Khushboo . PhD Scholar, Indira Gandhi National Tribal University, Amarkantak, Anuppur, Madhya Pradesh

Vinod Sen Assistant Professor, Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh

Persistent socioeconomic inequality in Bihar, India, is rooted in poverty, low literacy, inadequate infrastructure, and entrenched gender disparities, leaving women and marginalised groups with limited access to employment, education, healthcare, nutrition, and decision-making opportunities. The Bihar Rural Livelihood Project (JEEViKA), launched in 2006 by the Government of Bihar with World Bank support, seeks to address these disparities through skill development, financial inclusion, sustainable livelihood promotion, and mobilisation of self-help groups (SHGs).

This study evaluates JEEViKA's effectiveness as a skill-based public policy intervention for reducing inequality and empowering women in rural Bihar. Using secondary data from JEEViKA annual reports, government publications, and peer-reviewed literature, the research employs descriptive and trend analysis of the programme's performance between 2018 and 2024. The analysis covers SHGs expansion, skill training under the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), Rural Self-Employment Training Institutes (RSETIs), job fairs, and entrepreneurship promotion.

Findings reveal that JEEViKA has mobilised over 10.5 lakh SHGs, significantly expanding women's access to credit, financial literacy, social awareness, and collective livelihood activities. The DDU-GKY and RSETIs have enhanced market-linked skills, leading to higher placement rates and self-employment ventures, while job fairs have increased from 48 in 2018–19 to 150 in 2023–24. Despite severe disruptions during COVID-19, the programme rebounded strongly in training and placements, contributing to higher incomes, greater self-reliance, improved decision-making power, and stronger community solidarity. However, challenges persist, including low awareness in remote areas, infrastructure gaps, skill–market mismatches, weak market linkages for entrepreneurs, low post-placement retention, and coordination gaps among stakeholders.

The study concludes that JEEViKA's integrated approach—combining skill development, SHG-led financial inclusion, and women's empowerment—offers a scalable, adaptable, and sustainable model for inclusive rural development. Addressing existing operational bottlenecks through better skill-market alignment, outreach expansion, improved post-placement support, robust monitoring, capacity building, and stronger institutional coordination will be critical to sustaining and scaling its long-term impact on reducing rural inequality.

Heat Stress Impact on Street Vendors in Pune, India

Sheeva Y Dubey Assistant Professor, FLAME University, Pune, Maharashtra

Prasad Pathak Professor, FLAME University, Pune, Maharashtra

Yuvraj S Gatkal Research Associate, FLAME University, Pune, Maharashtra

Outdoor workers are at the frontline of facing climate change impact, which is showing no sign of slowing down. Street vendors are one such category of outdoor workers that are rendered highly vulnerable to climate change impacts owing to the nature and requirements of their work. A major threat is owing to the increasing heat stress and incidences of heatwaves that are more severe and extreme with every passing year.

This paper summarises the existing literature on vulnerabilities of street vendors to heat stress. The two major categories of impact found are physical impact on street vendors' health and economic impact on their earnings. In addition, the paper presents the findings from our primary study on heat stress impact on street vendors in Pune, India, and highlights their specific needs for improving their heat resilience.

We conducted a survey in 2023 and 2024 in the two major jurisdictions of Pune—Pimpri Chinchwad Municipal Corporation (PCMC) and Pune Municipal Corporation (PMC). The findings suggest high vulnerability of the street vendors of Pune to heat stress and very poor level of awareness and preparedness among them. Overall, the reach and impact of government programmes and initiatives among street vendors were also found to be very poor. In addition, the findings confirm sub-sector variations in heat stress impacts on street vendors depending on their geographic variations and local work environments. Specific vulnerabilities and needs of street vendors in PCMC and PMC are found to be considerably different. These have been detailed here in this paper.

The study calls for customised strategies to address heat stress impacts on street vendors in the two jurisdictions. Also, a larger policy-level dialogue is much needed to further look into the economic impact of heat stress on street vendors and policy solutions to address the loss and damage to ensure climate justice.

What Determines the Earnings of Cultural Labourers: A Case Study of Theyyam Ritual Performers in Kerala

Prinsha K P PhD Scholar, Dr. John Matthai Centre, University of Calicut, Thrissur, Kerala
Anju C Mohan PhD Scholar, Dr. John Matthai Centre, University of Calicut, Thrissur, Kerala

This research attempted to investigate the determinants affecting the earnings of cultural labourers, with a specific focus on Theyyam ritual performers in Kerala. The study aims to situate their economic status within the broader discourse on disparities in cultural labour markets. The hypothesis postulates that the earnings of Theyyam artists are shaped not solely by the traditional implication and hereditary aspects of their talent, but also by structural factors such as caste constraints, performance-related risks, networking capabilities, and investments in aesthetics.

The study utilised a qualitative case study methodology, and the data were analysed employing thematic analysis. The findings showed that Theyyam performances constitute a significant source of livelihood. Nevertheless, earnings exhibit considerable variation among different communities, with Vannan performers receiving higher remuneration compared to Malayan performers, despite both groups delivering performances of comparable ritual importance. The findings further clarified that remuneration is affected by seasonal dynamics, caste-specific agreements (Janmadhikaram), occupational hazards, and the financial burden of costumes and assistants, corroborating prior studies that have highlighted the volatility and income disparity encountered by cultural labourers. In contrast to other examinations of creative labour markets which prioritise reputational competition and market accessibility, the Theyyam context underscores hereditary exclusivity, limited career advancement, and entry restrictions predicated on caste.

The theoretical insights prompted from this research emphasise the imperative to reconceptualise the labour market for ritual performers as a synthesis of monopolistic and oligopolistic competition, characterised by unique cultural norms and ritual obligations.

The findings have extensive implications for discourses on cultural economics and heritage policy, accentuating the necessity to recognise performers as cultural labourers. This recognition necessitates the implementation of measures such as establishing minimum wage standards, providing social security, and offering governmental support for expenses associated with ritual performances. By integrating cultural labour theories with ethnographic data, the research enriches our understanding of the interaction between marginalised cultural practices and market dynamics within the context of globalisation and inequality. This highlights the imperative need for institutional frameworks designed to safeguard the economic well-being of traditional performers.

Education and Quality of Work in India: A Decent Work Approach

Shreya Das PhD Scholar, Indian Institute of Technology Madras, Chennai, Tamil Nadu

India has made considerable progress in terms of gross domestic product (GDP) growth rate and other macroeconomic indicators. However despite such economic progress, India has witnessed unsatisfactory improvement in labour market outcomes, especially in terms decent work. Education is one of the major determinants of decent work among several other parameters. The size of informal sector and high levels of underemployment among the educated youth perpetuates the overall poor working conditions in India. Between 2018-19 and 2023-24, calculations from Periodic Labour Force Survey (PLFS) data show that informal workers in the informal sector have increased by almost 12%. Currently, half the labour force is composed of informal workers engaged in the informal sector, standing at around 51% while formal sector employment has fallen for both informal and formal workers. It points towards poor quality of work and a widening decent work deficit. Workers are progressively excluded from accessing social security benefits and other work related security and protection. In India dominant share of jobs is still generated by micro and small units of the unorganised sectors without any formal or written job contract leading decent work deficit.

This paper explores the burden of decent work deficit among the educated workers with special focus on employment conditions of the youth in the country. Also, the association between education and quality of work is explored; does better education leads to decent working conditions or not. Therefore, we gather evidence, using the PLFS data 2023-24 round for our cross-section analysis.

We find an overall positive association between decent work and education, which indicates that with increasing education levels achieved, quality of work improves. Access to Social Security Benefits (SSB) steadily increases as education level increases. However, the overall coverage is poor; among male workers with post graduate and higher level of education almost 25% has no access to SSB, compared to 20% women. In terms of working poverty, we find that women have large burden of share of working poverty compared to men. Even at the graduate levels the proportion of women earning less than 2.15$/day is around a stark 40% and for post graduate and above it is around 30%, and for male workers it is around 20% and 18%, respectively. Also, working conditions seems to improve across all categories of education despite showing gender differences.

The Principal Component Analysis (PCA) is used to derive decent work scores for the workers which are generated following International Labour Organization's (ILO) framework. We observe the distribution of the DWI score across education levels and gender. The median DWI score is almost equal at the graduate level of education for both the genders and for post graduate and above, male workers fare increasingly better compared to female workers. Our special focus is on quality of work among the young workers; we compare them with

non-youth workers and disaggregate by education and gender to get a clearer perspective. Our main findings suggest that the youth workers perform worst in terms of quality of work compared to other categories of workers.

Education and Wage Inequality: How Gender and Skill Differences Influence Earnings

Arnob Paul Assistant Professor, Department of Economics, North Kamrup College, Assam

Kanchan Devi Researcher, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

Dil Bahadur Gurung Assistant Professor, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

This study examines the determinants of wage inequality in India with a particular focus on education, gender, and skill levels, using unit-level data from the Periodic Labour Force Survey (PLFS) 2023–24. Drawing individual observations, the analysis employs a Heckman two-stage selection model to correct for potential sample selection bias, followed by a Mincerian semi-logarithmic earnings equation to estimate returns to education, experience, skills, and other controls. Interaction terms between education, gender, and skill levels are included to assess differential effects, while the average rate of return to education is computed across five schooling categories, viz., primary, secondary, higher secondary, higher studies, and diploma/certificate qualifications. To further quantify wage disparities, an Oaxaca-Blinder decomposition is applied to separate the wage gap between men and women into explained (endowment) and unexplained (returns) components.

The findings confirm that education remains a key driver of wage growth, though returns vary sharply by level of schooling. Wage gains are modest at lower levels but increase substantially at higher secondary, diploma, and tertiary stages. Experience has a positive but diminishing effect on earnings, and urban workers consistently earn more than rural workers. Gender wage gaps remain significant across all education levels, with women earning 47–55% less than men. While additional schooling narrows this disparity slightly, it does not eliminate it. Moreover, vocational skills alone generate weak or inconsistent wage premiums unless combined with post-school technical qualifications, and skilled women face systematically lower returns than skilled men. Lastly, the Oaxaca–Blinder decomposition shows men earn about 48% more than women; 61% of this gap stems from education, work hours, and experience, while 39% remains unexplained, indicating lower female returns to similar characteristics and possible discrimination.

These results highlight the need for integrated policy measures: strengthening access to higher education, aligning vocational training with labour market demand, and addressing persistent gender bias in wage determination.

Education, Economic Growth, and Employment with Special Reference to Females in Uttar Pradesh

Ruchi Bhalla Assistant Professor, University of Delhi, New Delhi

Existing literatures have largely focused the role of human development in economic growth and overall well-being of human being. At the same time, economic growth also translates building of human development in terms of education, health, and other social indicators. The two-way linkage between human development and economic growth are necessary condition for attaining development objective.

The present paper seeks to examine this view point in the context of Uttar Pradesh (UP) districts. The state of UP is in the group of "Empowered Action Group" (EAG) that constituted mainly the lagged states of the country. The paper uses secondary data from various states to fulfil this objective. Educational index prepared across the districts exhibits vast disparities in UP. Districts in Western UP are far ahead from other zones of the state. In terms of infrastructure index, Western UP districts have secured the top 10 positions and Lucknow district of Central UP has witnessed better development. The state also witnessed a discouraging scenario in terms of various human development indicators, specially education. Ensuring quality employment is the necessity to attain the status of the 1 trillion economy.

The two way linkages of economic growth and human development exhibits that economic growth have not translated into better prospects of human development specially in terms of educational attainment among females in UP. Further, education did not seem to have a significant impact on economic growth and hence, employment of females in the state. Hence, it is suggested that appropriate policy directions are required to translate economic growth in to the attainment of better quality education and vice versa. This paper also emphasises on the relationship between unemployment level and educational status of the females in UP, and the possible policy implications to make graduate females a part of formal employment in the state.

Menstrual Leave Policies in India and Africa: Advancing Gender Equity in the Workplace

Meenal Shah Associate Professor, Om Kothari Institute of Management and Research, Kota, Rajasthan

In recent years, workplace inclusivity has emerged as a cornerstone of gender equity, with menstrual leave policies increasingly discussed as a means of recognising women's health needs within organisational structures. While several countries in Asia, such as Japan and South Korea, have long experimented with menstrual leave, the Global South presents contrasting realities.

India has been an early adopter of menstrual leave, beginning with Bihar's state policy in 1992, and more recently with corporate initiatives by companies such as Zomato, Swiggy, and Byju's. In contrast, African nations have largely focused on menstrual health education and product accessibility, with workplace policies remaining limited. Despite these developments, both regions continue to grapple with deep-rooted cultural stigma, weak legal mandates, and concerns over economic feasibility, especially within small and medium enterprises.

This study critically examines menstrual leave policies in India and Africa, drawing on secondary data including national labour codes, corporate policies, non-governmental organisation (NGO) reports, and international documents from United Nations Women, International Labour Organization (ILO), and United Nations Educational, Scientific and Cultural Organization (UNESCO). A qualitative comparative approach is employed to analyse policy frameworks, implementation strategies, and societal perceptions, with thematic analysis identifying recurring challenges such as stigma, institutional resistance, and administrative barriers. By situating the discussion within feminist organisational theory and institutional perspectives, the paper highlights how cultural norms and structural constraints shape workplace responses to menstrual health.

Findings reveal a marked asymmetry: India demonstrates policy experimentation at both governmental and corporate levels, albeit hindered by low uptake and fears of reinforcing gender stereotypes. Africa, on the other hand, reflects a near absence of formal workplace accommodations, though grassroots advocacy has laid foundations for potential reform. The comparative analysis underscores three central dimensions necessary for successful policy adoption: cultural acceptance, legal mandates, and economic feasibility. Lessons from India suggest that government-backed frameworks and private sector leadership can normalise menstruation in workplaces, while Africa's community-based advocacy offers models of destigmatisation that India could emulate.

The paper contributes to the literature by bridging a research gap in cross-regional analysis of menstrual leave policies, proposing a three-pillar framework for culturally sensitive and economically sustainable policy design. It argues for cross-regional knowledge exchange, stronger awareness campaigns, and integration of menstrual leave into broader workplace health strategies. Ultimately, addressing menstrual health in workplaces is not merely a matter of welfare, but a strategic pathway towards gender equity, improved productivity, and inclusive development.

Examining the Real Wage Growth in India: Labour Market Slack, Cohort Inequality, and the Wage Curve

Nawazuddin Ahmed Assistant Professor, Symbiosis International University, Pune, Maharashtra

The stagnation of real wages in India has drawn increasing attention, yet the mechanisms underlying this phenomenon remain underexplored. Traditional explanations rooted in

surplus labour and agricultural distress highlight structural pressures on wages, but empirical analysis of wage determination in India is limited. This study contributes by investigating the wage curve, the negative relationship between wages and labour market slack. This study relies on repeated cross-sections from the National Sample Survey (NSS) and the Periodic Labour Force Survey (PLFS) spanning 1988 to 2023–24.

Unlike most existing studies that proxy slack only by unemployment, this study employs a broader set of measures, including unemployment, underemployment, and inactivity among the working-age population (15–64). Region-level panel regressions with year and region fixed effects provide new evidence on how different dimensions of slack condition wage outcomes in India. Beyond the cyclical perspective, the study addresses a structural question: Do younger labour market entrants face systematically weaker wage trajectories than earlier generations? To examine this, a pseudo-panel of synthetic cohorts defined by birth year and education, and an age–period–cohort model of real wages has been constructed. This dual strategy allows to study both the short-run wage responsiveness to labour market conditions and the long-run generational patterns of wage inequality.

The findings bridge two strands of literature: macro labour economics focusing on slack and wages, and the cohort-based analysis of long-run inequality. In doing so, the paper provides the first systematic evidence on the wage curve in India and highlights the dual challenge of cyclical slack and cohort-specific stagnation in shaping labour market outcomes. In summary, while some of the recent work has examined real wage stagnation through the lens of labour market slack, evidence remains concentrated on advanced economies. For India, systematic analysis of the wage–slack relationship is still missing, despite persistent concerns about employment quality and real wage growth. Moreover, existing studies do not consider whether younger cohorts face systematically weaker wage trajectories compared to older cohorts, an issue central to long-run inequality. By combining a wage-curve framework with a cohort-based pseudo-panel approach, this study addresses both the cyclical and structural dimensions of wage stagnation in India.

Analysing the Impact of Economic Growth on Female Employment in India

Simran Jain PhD Scholar, Birla Institute of Technology and Science, Pilani, Rajasthan

Women's employment is considered an important indicator of inclusive growth, yet India has experienced a consistent decline in women's employment despite the rapidly rising growth rates and structural transformation since the 1990s. Women's entry into the labour market is only driven by economic opportunities but is a product of complex social, cultural, and political factors that govern their employment outcomes. This study investigates the impact of economic growth and other socio-political macro indicators on the female workforce

participation rate (WFPR) in India during 1991-92 to 2022-23. We have taken data from various sources, including the World Bank, Reserve Bank of India (RBI), and the National Crime Records Bureau (NCRB) Report, and applied the Toda Yamamoto Vector Autoregression (VAR) model to examine the bi-directional causal relationship between economic growth and female WFPR.

The results confirm the existence of a U-shaped relationship between GDP and female WFPR, as female employment tends to decline in the initial stages of growth due to structural rigidities, but eventually witnesses a positive impact, as the economy becomes more inclusive. While the impact of foreign direct investment (FDI) was insignificant in earlier models, it emerged as an important determinant of the female WFPR once socio-political factors were incorporated. School enrolment of women in tertiary education did not have any significant impact on female employment even though increased female employment had a positive impact on women's educational enrolments. Further, the women's political participation index has a strong positive influence on women's employment, while crime affects it negatively. In turn, women's employment was seen to have a significant positive impact on these economic, social, and political indicators. Thus, there is a need for comprehensive policy interventions that promote inclusive growth, ensure workplace safety, and gender-sensitive governance to realise the full potential of female manpower in the economy. Higher female employment would not only enhance women's financial well-being but also result in greater social and political empowerment, thereby boosting economic growth.

TECHNICAL SESSION **2.13**

Education, Skills, and Female Labour Force Participation in India: Evidence from Periodic Labour Force Survey 2023–24

Meghna Manoj Badlani Ph.D. Scholar, Veer Narmad South Gujarat University, Surat, Gujarat

Gaurang Dattubhai Rami Professor, Veer Narmad South Gujarat University, Surat, Gujarat

This study investigates the intricate interlinkages between education, employment, and female labour force participation (FLFP) in India, drawing on the most recent unit-level microdata from the Periodic Labour Force Survey (PLFS) 2023–24. While education is widely acknowledged as a critical catalyst for women's empowerment, the Indian labour market presents a paradox: higher educational attainment does not consistently yield proportional increases in women's participation. This disjuncture underscores the need for a multidimensional analysis that considers not only human capital formation but also the structural and institutional factors that influence women's labour market outcomes.

Anchored in the Human Capital Framework, Feminist Economics, the U-shaped Hypothesis, and the International Labour Organization's (ILO) Decent Work Agenda, the paper addresses the central research question: How does education mediate the impact of other socioeconomic determinants on women's participation in the labour market in India? The empirical strategy employs binary choice models (Logit and Probit) to estimate the probability of women's labour force participation across national, rural, and urban contexts. The dependent variable is binary (employed or not employed), while the independent variables include years of schooling, vocational/technical training, age, marital status, household income, sector of employment, and rural–urban location. Interaction terms particularly between education and marital status are introduced to capture heterogeneity in participation patterns.

Findings reaffirm the U-shaped hypothesis, showing lower participation at intermediate education levels and higher participation at both the lowest and highest levels of education. Vocational and technical training emerges as a significant determinant, increasing the likelihood of women's entry into the labour market, particularly in formal sector employment. However, despite the capability-enhancing role of education, its translation into tangible labour market participation remains constrained by limited formal job creation, sectoral mismatches between skill supply and demand, gendered care responsibilities, and entrenched socio-cultural norms.

Policy implications include the need to align education and skill development programmes with current and emerging labour market demands, expand formal and decent work opportunities, integrate recognition of unpaid care work into economic and policy frameworks, and ensure compliance with Sustainable Development Goals (SDG 4 – Quality Education, SDG 5 – Gender Equality, and SDG 8 – Decent Work and Economic Growth).

By combining rigorous econometric analysis with a multi-theoretical lens, this study offers actionable insights for policymakers, development practitioners, and scholars seeking to enhance gender-equitable labour market outcomes in India.

Tracing the Gender Divide in Indian Occupations (2023-24)

Baishakhi Mondal Assistant Professor, Indraprastha College for Women, New Delhi

This paper examines the gendered contours of occupational distribution in India, utilising the Periodic Labour Force Survey (PLFS) for the period 2023–24. Adopting a descriptive statistical framework, the study maps the sectoral and occupational concentrations of male and female workers, revealing patterns of gender segregation across the Indian labour market.

The analysis begins by identifying sectors with high relative concentrations of men and women, highlighting gendered clustering in industries such as construction, manufacturing, education, and health services. Within these gender-skewed sectors, data are further disaggregated to examine occupational roles, uncovering nuanced differences in task allocation and employment hierarchies. Findings indicate that men predominate in physically intensive and supervisory roles, while women concentrate in caregiving, clerical, and support functions—even within the same sector. This occupational stratification reflects entrenched gender norms and differential access to skill development and mobility.

To assess employment quality, the paper evaluates the prevalence of vulnerable enterprises—defined by the absence of formal contracts, social security provisions, and enterprise registration—within these occupational clusters. The share of employment in such informal and precarious settings is disproportionately higher for women, intensifying economic insecurity, and limiting upward progression. Duncan's Occupational Dissimilarity Index has been adopted to compute the occupational sex segregation by industries, age groups, general education levels, and technical education levels, to investigate how the cross-sectional segregation index changes with organisational structure of different industries, age related specifications of employees, and differences in the opportunities that come along with the differences in the acquired level of educations.

This nuanced visual approach confirmed the multidimensionality of the prevalent sex segregation present. By integrating sectoral, occupational, and enterprise-level analyses, the study offers a multidimensional view of gendered labour market outcomes in India.

These descriptive insights into sectoral clustering, occupational hierarchies, and informal vulnerabilities provide a solid empirical foundation for theoretical debates and methodological discussions.

Not in Employment, Education or Training: A Study of Female Youth in India

K. S. Hari Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra

B. Satheesha Sr. Research Associate, Gokhale Institute of Politics and Economics, Pune, Maharashtra

In 2023, the International Labour Organization (ILO) reported that 20.4% of the global youth population were not in education, employment, or training (NEET), with women comprising 171 million of the 256 million. In India, 42.8% of young women were NEET, posing serious risks to country's long-term employability and socioeconomic growth.

This paper examines the determinants of falling into NEET status in India, with a particular focus on youth—especially women—from both rural and urban areas. The study is based on annual Periodic Labour Force Survey (PLFS) data conducted by National Sample Survey Office (NSSO). The periods considered for the study are 2017-18 (pre-COVID year), 2020-21 (first COVID year) and 2023-24 (post-COVID year). We find that the risk of becoming NEET is considerably greater among married women and youth from economically disadvantaged households. Domestic responsibilities constitute the largest share of NEET status among women, accounting for nearly 90% of NEET women in both rural and urban settings. Social norms significantly influence the likelihood of young Muslim women, as well as women from more affluent rural households, being engaged in domestic duties. In contrast, childcare and homemaking responsibilities are the predominant reasons which restrict women from moving out of domestic duties, especially for married young women, and those belonging to Scheduled Tribes (ST) and Other Backward Castes (OBC).

These patterns point to deeply entrenched social norms and childcare responsibilities as key barriers to female workforce participation in India. Although NEET rates have declined over time, the quality of employment remains a concern, as many female youths entered the labour market in the form of unpaid family labour. This is concerning because the youth population is a critical driver of productivity and economic growth. Successful examples from East Asian countries underscore the importance of exploiting demographic transitions for economic benefit. Insufficient creation of good-quality jobs, which may have compelled many youths to turn to self-employment, particularly following the COVID-19 shock that led to significant employment and income losses, especially in the non-farm sector. Addressing labour market challenges requires targeted policy interventions focused on skill development, gender-inclusive employment policies, and the creation of quality jobs to ensure that India's youth can fully participate in its economic growth.

Economic Globalisation and Women's Empowerment in India: An Application of the ARDL Approach

Chitra Saruparia Assistant Professor, National Law University, Jodhpur, Jodhpur, Rajasthan

Prashant Kumar Verma PhD Scholar, Birla Institute of Technology and Science (BITS Pilani), Pilani, Rajasthan

Arun Kumar Giri Professor, Birla Institute of Technology And Science (BITS Pilani), Jodhpur, Rajasthan

The present study seeks to investigate the relationship between economic globalisation and women's empowerment in India by analysing annual time series data covering the period 1991–2022. The research employs the Autoregressive Distributed Lag (ARDL) approach to model both short-run dynamics and long-run equilibrium relationships. To verify the existence of cointegration, the bounds testing procedure is applied, while the Augmented Dickey–Fuller (ADF) and Ng–Perron unit root tests are used to examine the stationarity properties of the underlying time series variables. This rigorous methodological framework ensures the robustness of the results in the presence of mixed integration orders.

The empirical findings derived from the ARDL estimation suggest that both long-run and short-run factors significantly influence female labour force participation (FLPR) in India. Specifically, the results indicate that economic integration—an important dimension of globalisation—along with female political participation, emerges as a key driver of women's engagement in the labour market. In the short run, globalisation generates immediate opportunities by enhancing market access, knowledge spillovers, and investment flows, while in the long run it fosters structural changes that create sustained pathways for women's economic participation. However, the study also highlights that the positive impact of globalisation is not automatic. The benefits are contingent upon the presence of enabling conditions such as gender-sensitive labour market policies, institutional support, and targeted interventions that address the barriers women face in accessing decent employment.

Overall, the study contributes to the literature by providing empirical evidence on how globalisation interacts with socio-political factors to shape women's empowerment outcomes in India. The findings underscore the need for a comprehensive policy framework that integrates economic reforms with inclusive labour market strategies to translate globalisation-induced growth into genuine empowerment for women.

Impact of Cash Transfer on Indian Labour Market: A Review

Mala Bhattacharjee Associate Professor, Raja Peary Mohan College, Uttarpara, West Bengal

Rajrupa Mitra Associate Professor, Raja Peary Mohan College, Uttarpara, West Bengal

Unemployment problem is a formidable socioeconomic challenge for the Indian economy

rendering all developmental efforts inefficacious and redundant. In terms of the first monthly Periodic Labour Force Survey (PLFS) released by the Ministry of Statistics & Programme Implementation, unemployment rate stood at 5.1% in April 2025. It increased to 5.6% in May 2025 and stood still at 5.6% in June 2025. Consequently, overcoming this structural bottleneck is on the priority list of the government. India can address its employment crisis through a combination of strategies focused on skill development, job creation in labour-intensive sectors and reforms in the education sector. In this context, provision of social safety nets in the form of direct benefit cash transfers can alleviate the detrimental effects of unemployment and foster socioeconomic empowerment. This includes a more inclusive and targeted approach to employment programmes. However, the effectiveness of such transfers is contingent upon contextual factors like programme-design, governance and complementary schemes with viable social protection and employment promotion initiatives.

The objective of this paper is to study the variations in labour force participation rates (LFPR) and cash transfers across the states and Union Territories in India, and to check whether any relation exists between cash transfer and LFPR. For the purpose of our study, secondary data have been collected for the period 2019 to 2023 from PLFS under Ministry of Statistics and Programme Implementation and Open Government Data (OGD) platform of India. The paper uses descriptive statistics and panel data regression to explore the relation.

Our findings indicate a positive and significant relation between graduation and LFPR as well as between LFPR and cash transfers. An obvious implication of such positive relation between LFPR and cash transfer is that growing cash transfers among the population can lead to reduction in poverty and enhance productivity, which can endorse a path to labour force participation.

The result obtained in our study, if implemented, can have a far-reaching impact on solving the foremost problem of unemployment of our country. Herein lies the significance of our study. Cash transfers, by themselves, are unable to cure deep-rooted social ills like poverty and unemployment. Thus, a comprehensive approach integrating cash benefits with essential elements such as education, skill development, and employment opportunities is required. Instead of making the beneficiaries financially dependent, transfers should be deployed as stepping stones towards self-reliance and economic empowerment. Although we have highlighted three effects of cash transfer on LFPR, we have not been able to identify the real effect which has led to rising LFPR. Another important factor to be noted is the distinction between conditional and unconditional cash transfers cannot be made from the given data. Hence, the impact of which particular type of cash transfer has taken place could not be justified. These missing links leave room for further research in the field.

Bridging the Education–Employment Divide: Youth Transitions in Telangana for Viksit Bharat 2047

Sivakumar Danyasi Project Fellow, Council for Social Development, Hyderabad, Telangana

Sujith Kumar Misra Professor, Council for Social Development, Hyderabad, Telangana

The vision of Viksit Bharat 2047 envisions a transformed India through inclusive growth, robust skill ecosystems, and empowered youth. Central to this ambition is the alignment of education and employment for Telangana's youth (15–29 years), a demographic critical to economic progress. This study investigates labour market trends and educational transitions in Telangana from 2004-05 to 2023-24, drawing on data from the National Sample Survey Office (NSSO, 2004-05, 2011-12) and Periodic Labour Force Survey (PLFS, 2017-18, 2023-24). It examines labour force participation rates (LFPR), worker population ratios (WPR), unemployment rates, NEET (Not in Employment, Education, or Training) rates, and employment-unemployment dynamics across general and technical education levels. The analysis further explores rural-urban and gender disparities, linking these trends to Viksit Bharat 2047 initiatives like the National Education Mission, NIPUN Bharat, and skill development programmes.

Telangana's youth (aged 15–29 years) stand as pivotal catalysts for realising Viksit Bharat 2047, yet this analysis (2004–2024) reveals a dynamic interplay of progress and persistent challenges demanding urgent action. Remarkable strides in educational attendance (34.75%) and gender parity (sex ratio 105.38) coexist with stark disparities, as female youth face NEET rates 35 times higher than males (32.27% vs. 0.92%) and rural-urban gaps persist (4.11 percentage points in education). The projected youth population decline to 20% by 2036 underscores a narrowing demographic dividend, while a critical skills-job mismatch fuels high unemployment among educated youth (32.6% for graduates, 92.7% for rural female technical above-graduates). Telangana must harness its educational gains and demographic potential through targeted skilling, rural infrastructure investments, and gender-sensitive policies to empower its youth, transforming systemic barriers into opportunities for inclusive, knowledge-driven prosperity.

Labour Intensity and Job Quality in Indian Manufacturing: Recent Trends

S. S. Somra Professor, University of Rajasthan, Jaipur, Rajasthan

Prateek Tanania PhD Scholar, University of Rajasthan, Jaipur, Rajasthan

This paper gives a job-centric view of recent trends in Indian organised manufacturing by jointly analysing the labour intensity as well as job quality at the NIC-3 digit level. Using data from Annual Survey of Industries (ASI), labour intensity is defined as the number of workers per unit

real fixed capital. Unit level data from Periodic Labour Force Survey (PLFS) is used to quantify the quality of jobs by constructing a 5-dimensional Job Quality Index (JQI). The JQI consists of five binary indicators based on contract type, availability of paid leaves, availability of social security, regular availability of work, and a decent wage threshold. We use the recommended decent wage threshold given by the 2019 Expert Committee on Minimum Wages for calculating the decent wage thresholds for each year. Using the NIC-3 digit codes, we combine the two datasets for jobs in organised manufacturing. Hence, we get the industry groups categorised based on labour intensity and job quality into four categories. Each industry is placed into one of four categories: High-Quality Labour-Intensive (HQLI), High-Quality Capital-Intensive (HQCI), Low-Quality Labour-Intensive (LQLI), or Low-Quality Capital-Intensive (LQCI). We find that the JQI has remained stagnant over the past six years. In terms of employment, high-quality jobs (HQCI and HQLI combined) account for only about 38.0% of organised manufacturing in 2022–23, with the most desirable HQLI category making up just 16.1%. By contrast, Gross Value Added (GVA) is increasingly concentrated in capital intensive industries: the share of HQCI , despite falling, still 43.4% in 2022–23, while that of HQLI increased from 6.5% to 16.8% over the same period. Overall, the sectors with most capital intensity continue to fare well in terms of job quality as well as GVA share, but these jobs remain a small fraction of total employment in organised manufacturing.

Workforce Crisis: Skills Mismatch and Unemployment in India

Basamma Biradar Master's Student, FLAME University, Pune, Maharashtra
Neha Bailwal Assistant Professor, FLAME University, Pune, Maharashtra

India today faces a demographic paradox. With the world's largest youth and working-age population, the country has a unique opportunity to transform this demographic advantage into sustained economic growth, as countries like South Korea, China have done successfully. Yet, this opportunity could just as easily become a liability if the labour market fails to productively absorb young workers. At the centre of this tension lies the growing problem of skill mismatch; the gap between the qualifications, training, or skills individuals acquire and the types of jobs actually available to them.

In this context, this paper examines the problem of skill mismatch in India using recent rounds of the Periodic Labour Force Survey (PLFS). We begin by comparing educational qualifications with occupational categories to estimate the extent of mismatch in the labour market. For example, when graduates are concentrated in low-skill service jobs or when individuals with only primary education occupy regular salaried positions, it signals a misalignment in the labour market. Our methodology involves constructing indicators of overqualification and underqualification based on international benchmarks and tracking their change over time. The PLFS data findings suggest that India's skill mismatch has deepened in recent years. In 2018–19, about 53.0% of the workforce had education up to secondary level

or below. By 2023–24, this share had risen sharply to nearly 90.0%, with 88.0% of workers employed in low-skill jobs. In contrast, only 9.3% were engaged in specialised roles, and just 2.5% were in high-skill occupations. By contrast, only 9.3% of workers were in specialised roles, and a mere 2.5% in high-skill occupations. Even among graduates, nearly 50.0% were underemployed, and approximately 40.0% of postgraduates were working in jobs that fell below their qualifications.

Two factors stand out: the low quality of education and the type of jobs created in the labour market. India's education system has historically prioritised general academic degrees over vocational or technical pathways, creating a disconnect between what is taught and what employers require. Curricula in many institutions remain outdated, often failing to include emerging skills such as digital literacy, advanced manufacturing, or financial technologies. Limited collaboration between educational institutions and industry further weakens the link between training and workplace needs. Social perceptions also play a role; vocational education continues to carry stigma, with students and families often preferring traditional degrees even when they do not guarantee employment. International experiences offer valuable lessons. Germany's dual vocational training model, which integrates classroom learning with industry apprenticeships, has been particularly effective in aligning skills with market demand. South Korea invested heavily in upgrading technical and vocational institutions while also raising the social status of vocational careers. China's rapid expansion of skill-based education in parallel with industrial policy illustrates how coordinated reforms can quickly narrow mismatch gaps.

Drawing from these models, this paper argues that India must urgently recalibrate its skills ecosystem. Policy recommendations include embedding vocational education earlier in the school system, strengthening apprenticeship and internship pipelines, directly involving employers in curriculum design, and introducing dual certification systems that facilitate mobility between vocational and academic tracks. Equally important is changing cultural perceptions: vocational training must move away from being viewed as a "fallback option" and instead be recognised as a respected and rewarding career pathway.

The 'Becoming' of a Footloose Labour: Explorations of the Lives of the Informal Internal Migrant Labourers in India

Taniya Banerjee PhD Scholar, Patna University, Patna, Bihar

Migrants are in a continuous flux of movement from "rural to urban" and short and long-term migrants. The paper unpacks the trails of the internal migrants through vital aspects of their lives. This paper explores the process of becoming an internal migrant and the factors that have propelled one to move to the host city, stay at the destination, or return to the origin. It uniquely identifies the experiences beyond the push-pull theory of migration and fosters a deeper understanding of the spatial-temporal assessment of the migrants.

The paper presents new dimensions of the informal construction workers based on interaction with 18 migrant construction workers' transcribed records of interviews. A qualitative analysis software tool analyses the data by incorporating thematic coding and further categorising raw information. The study shows the restructuring of the concept of the "footloose labour" by Breman, who, in his 1996 anthropological study of the rural poor in western India, identified the informal sector as a temporary space for labourers who, when unrequired, could be sent to their place of origin. But this study highlights that these labourers migrate for reasons that are not just limited to the aspect of land as an asset, large family size, debt, poverty, and lack of economic opportunities, but also the experience of precariousness due to no availability of regular work and wage theft at the origin as well. Such conditions have accentuated the seasonal, circular, and temporary migration from West Bengal, Uttar Pradesh, and Jharkhand.

This paper brings out the glaring gaps in identifying the changing nature of the relationship with the contractor as the source of labour supply, as well as the source of the migration-related decision-making process. It also enriches and widens the approach to look at the various junctures of agency of the migrant workers in their journey. It also attempts to situate the Cumulative Causation Theory of Migration in the context of the contemporary internal migration in India.

TECHNICAL SESSION 2.14

An Empirical Study of Gendered Labour Market Outcomes in India

Sonam Arora Manager, Gokhale Institute of Politics and Economics, New Delhi

Gender differences in education and work are deeply ingrained in India. Despite constituting 48% of the country's population, women represent only 30% of the workforce, a mere 158 million out of the 500 million workforce. The shift in the national agenda of economic growth to inclusive growth has led to substantial improvements in educational attainment and participation in the labour market. However, gender disparities continue to erode economic potential of human capital. There exists a skewed enrolment ratio in higher education towards women with gross enrolment ratio of 28.5% among women vis-à-vis 28.3% among men in 2021-22, but the same is not replicated in the employment outcomes. The workforce participation rate among women increased from 22.0% in 2017-18 to 40.3% in 2023-24 with a reduced unemployment rate from 5.6% to 3.2%. There have been improvements in both rural and urban areas, with workforce participation rate in rural areas increasing from 23.7% to 46.5% and in urban regions from 18.2% to 26.0%. With technological advancements and artificial intelligence (AI) capturing a majority of the leading roles in all sectors and industries, women are at a high risk of losing their employment prospects and progression. Training and skilling women for the secondary and tertiary sectors can propel them beyond low-paying, informal work, offering them access to better-paying, formal jobs with social security benefits and career progression opportunities.

With this vision, the Indian government launched various initiatives that target women. Disappointingly, only 18.6% of women received any form of vocational training as compared to 36.1% men in 2021-22. Despite reservation policies, female enrolment remains highly skewed towards traditional sectors like beauty, textiles, and hospitality. Moreover, urban skilled women are more likely to be employed in formal sectors like information technology (IT), finance, and education whereas rural skilled women often work in education, healthcare, and self-employment.

A survey of women higher education graduates from Delhi/NCR region reveals that despite being skilled, they face challenges in transitioning from education and training classrooms to participating, performing, and progressing in the labour market. A majority of the respondents have shown interests in on-the-job up-skilling avenues due to their inability to enrol separately because of household and elderly care responsibilities.

In the light of existing gender disparities, this paper aims to analyse and understand whether higher education and skilling act as "employment-enablers" for Indian women. This paper examines the employment trajectories of by gender in India, using nationally representative data from the Periodic Labour Force Survey (PLFS). By focusing on women of working-age who have received formal vocational or technical training, the study explores whether skilling translates into gainful employment. Also, a survey of higher education women graduates is undertaken to identify the bottlenecks with regards to up-skilling in the transitionary phases of participation, performance, and progression in the labour market. The findings of both primary and secondary analysis are then conceptualised to suggest policies initiatives that augment employment outcomes of skilled women in India.

Factors Influencing the Performance of Women Entrepreneurs in Uttar Pradesh

Kanchan Srivastava PhD Scholar, University of Lucknow, Lucknow, Uttar Pradesh

The Sustainable Development Goals (SDGs) emphasise gender equality and the economic empowerment of women, particularly through increased participation in entrepreneurial activities. However, many women entrepreneurs in developing countries struggle with slow business growth and underperformance. The most significant challenge for these entrepreneurs is sustaining and scaling their businesses beyond the startup phase. Business performance is typically assessed using indicators such as year-on-year growth in sales, profit margins, market share, and return on capital. In the context of women entrepreneurship, success is frequently linked to outcomes such as sales growth and job creation.

This study investigates the key drivers influencing the performance of women entrepreneurs in the Indian state of Uttar Pradesh. Employing a cross-sectional survey design, primary data were collected from 200 women entrepreneurs across four districts—Lucknow, Agra, Varanasi, and Jhansi—using structured questionnaires. The snowball and purposive sampling technique was applied to reach the targeted participants. The instrument comprised of sections on socioeconomic profiles and potential performance determinants. A binary logistic regression model was used to identify statistically significant predictors of performance of women entrepreneurs. To assess the model's goodness of fit, the Hosmer-Lemeshow test was applied. The test yielded a non-significant result ($p = 0.381$), indicating that the model fits the data well. The values of Cox & Snell R^2 (0.344) and Nagelkerke R^2 (0.459) suggest that the model explains a substantial proportion of the variance in the dependent variable. Further, logistic regression results revealed that access to training, social networking, high production costs, use of modern technologies, and market accessibility significantly impact performance of women entrepreneurs. In contrast, access to finance, risk-taking ability, and educational attainment were not found to be significant predictors.

These findings offer valuable insights for policy formulation aimed at strengthening women's entrepreneurship in emerging economies. Policy implications derived from this study emphasise the need for targeted interventions aimed at reducing production costs through the promotion of efficient production techniques and economies of scale. Government initiatives should facilitate easier market access for women entrepreneurs by providing dedicated retail spaces within public institutions. Financial incentives such as subsidies could encourage increased production at reduced costs. Moreover, enhancing access to quality training and education is vital for empowering women entrepreneurs and improving their business outcomes. Organising trade fairs and exhibitions specifically for women entrepreneurs can further support their efforts by providing platforms to showcase products, build networks, and expand customer bases.

Gender Pay Gap: A Comparison of Informal versus Formal Sector

Rayees Ahmad Sheikh Assistant Professor, Indian Institute of Management, Indore, Madhya Pradesh

The gender pay gap persists in almost all the countries in world just that a few counties have less gender pay gap than others. The recent gender gap report has the gender pay gap is going to a century more to close. The recent work on the gender wage gap has focused on the closing education gap and legislation and its impact on the gender wage gap. It has however been reported that the work. India has the huge gender wage gap and is ranked among the worst performing nations in gender pay parity according to the ILO's Global Gender Gap Report. The gender wage gap has been attributed to different factors like lack of skilling, social and cultural factors, patriarchy, etc. Within households, women are charged with the duty of the domestic chores. It is because of this that either women stay out of labour market or are pushed to work in informal sector. The reason to push is because of the flexibility women have in informal sector and the jobs are often in the vicinity of home. Gender pay gap has been persisting in the economies world over. In India the gender pay gap has been closing but still a huge pay gap exists. In this study estimate gender pay in India by using the nationally representative Periodic Labour Force Survey 2023-24. As majority of workers in India work in informal sector, we focus on the comparison of gender wage differences in informal and formal sectors. We include parental education, caste, religion and region of birth as circumstances apart from personal factors like education and age. There is overall wage gap but the gender wage gap is more prominent in formal sector. The results also suggest that there is higher wage in the higher educated income cohort (graduate and above). The findings imply also that socially and culturally imbedded factors like caste and religion which are more persistent do contribute to the gender pay gap in formal as well as the informal sector. The results of the study have potential policy implications.

Gender Role Attitudes and Work Participation: A Study on Highly Educated Married Women in Kerala

Reshma R U PhD Scholar, Central University of Karnataka, Kalaburagi, Karnataka

Pushpa M Savadatti Professor, Central University of Karnataka, Kalaburagi, Karnataka

Gender equality is an essential element to facilitating economic development. Gender inequality in labour force participation is one of the significant development challenges facing countries globally. An increase in women's labour force participation can lead to aspects of economic development and gender equity. It also gives a greater degree of financial autonomy and decision-making power to women. Kerala is the southernmost state of India and is known for its high literacy, social development, and gender equity. Kerala has the highest female literacy among all Indian states and the highest female gross enrolment in higher education. Despite its notable educational achievements and social progress, a significant gender gap exists in workforce participation. Particularly among married women, work participation is alarmingly low.

This study examines the influence of gender role attitudes on married women's work participation in Kerala. Additionally, the study focuses on the family responsibilities and organisational support systems shaping female work participation. The study is based on primary data collected from married women who have completed at least a bachelor's degree in the age group of 25 to 35 from the Ernakulam district, Kerala. Data was collected using a structured questionnaire. Descriptive statistics and Logistic regression are used for data analysis.

The results show that women possess an egalitarian attitude towards women's employment, decision-making, leadership positions, and traditional views about family roles, especially childcare. The Logistic Regression results show that progressive gender role attitudes significantly increase the likelihood of women's workforce participation. Other variables such as family type, religion, social category, and ownership of assets also significantly influence the likelihood of highly educated married women's work participation in Kerala. Results reveal that a conflict exists between women's professional commitments and household responsibilities. While previous studies in India have examined the role of education and macro factors explaining female labour force participation. Few studies have focused on micro factors; they have largely treated gender norms and socio-cultural expectations as background influences rather than central explanatory variables. There is a lack of empirical examination of gender norms on female work participation in the Kerala context.

This study contributes to the literature by providing empirical insights into persistent gender role-related constraints that hinder women's workforce participation in a progressive state like Kerala. The study provides policy recommendations aimed at improving women's workforce

retention in similar socio-cultural contexts. These results call for targeted interventions addressing cultural norms, workplace flexibility and supportive marital partnership. Education provides a strong potential to join the workforce, but effective support systems are necessary to translate that potential into actual workforce engagement.

An Exploration of the Growth and Employment in Contemporary West Bengal

Debolina Biswas Assistant Professor, Gurudas College, Kolkata, West Bengal

Soham Bhattacharya Fellow, KREA University, Chengambakkam, Andhra Pradesh

This paper investigates the growth trajectory and patterns of employment for the economy of West Bengal for the last decade (i.e., between 2012-2023). The broad aim of the study is to seek an answer to the following: whether the current growth regime and related subsectors have generated employment? This is followed by a critical analysis of the nature of employment, which is taken up to understand whether 'jobs' remain decent or have 'newer' vulnerabilities surfaced?

Our findings show that in terms of growth, manufacturing sector registered high growth compared to the agriculture and the tertiary sector. However, manufacturing failed to generate enough employment to absorb the labour. It is the agriculture and the tertiary sector, that generated most of the employment during the time period under discussion. Upon further disaggregation, we observe that within the tertiary sector, the subsectors of trades (wholesale and retail) and hotel and restaurant relatively grew at a higher rate and generated the highest share of employment. The nature of employment generation remains salaried employment within the wholesale and retail sub-sectors. This appears to be an apparent good sign for a service sector-dominated economy. However, further disaggregation shows that there is a constant process of individualisation of economic crisis within this subsector of wholesale and retail trade. Majority of workers in these sub-sectors are engaged in low-level of blue-collar jobs — these jobs are being generated with little to no job security, and provide meagre earnings when compared to the overall Indian scenario. The process of 'individualisation' lies in the fact that there are hardly any existing efforts or formulation to organise this section of workers from the traditional left-worker-trade union combine. The emerging pattern of vulnerabilities among the salaried section in the wholesale and retail trade (one of the large contributors of employment in the present situation) raises the question of the sustainability of the existing employment and growth trajectories in the state economy.

Fostering Entrepreneurial Competence in Tribal Graduates of Jharkhand

Anshu Neeva Kujur Fellow, Ranchi University, Ranchi, Jharkhand
Marcus Barla Associate Professor, Ranchi University, Ranchi, Jharkhand

Jharkhand, with a 26.2% tribal population, faces persistent socioeconomic challenges despite a 4.3% increase in Scheduled Tribe (ST) graduates from 2000 to 2022. Tribal youth experienced a 7.5% unemployment rate in 2023-24, driven by skill-market mismatches and scarce formal job opportunities. Self-employment dominates, engaging 56.6% of the workforce in low-yield ventures such as bamboo crafting or subsistence farming, yielding annual incomes of â,¹33,000–50,000. Only 2.5% of tribals own formal businesses, underscoring the gap between necessity-driven self-employment and growth-oriented entrepreneurship. Entrepreneurial competence, integrating cognitive (knowledge, skills), affective (attitudes, values), and conative (motivation, action) domains, is essential for fostering innovation and scalability. In Jharkhand, 30.2% of tribal youth in Ranchi rely on non-farm self-employment, requiring skills like problem-solving, risk-taking, and market engagement to transition to dynamic entrepreneurship. National policies aim to embed skill development in education; yet, access remains unequal, favouring those with higher education or income. Local initiatives, such as training programmes for tribal women in Simdega to produce jute products and cooperatives in Gumla accessing broader markets, demonstrate potential. However, significant barriers persist: 93% of tribal women remain tied to agriculture due to limited capital, only 26% of entrepreneurs in Gumla and 11% in Khunti receive formal training, and weak market linkages hinder scalability.

This paper examines socioeconomic, cultural, and policy-related barriers to entrepreneurial development among ST graduates in Jharkhand. By cultivating competencies such as innovation, leadership, and networking, tribal graduates can transform subsistence activities into thriving ventures, creating jobs and preserving cultural heritage. The study recommends expanding accessible skill training, leveraging digital platforms to enhance market access, and strengthening public-private partnerships to ensure inclusivity. These efforts align with India's entrepreneurial landscape, where 11.5% of the population engages in early-stage entrepreneurship, offering a pathway to empower tribal youth, reduce unemployment, and foster economic resilience. By addressing these barriers and enhancing competencies, Jharkhand can promote sustainable growth, enabling tribal graduates to contribute to inclusive development while leveraging their cultural strengths and community-driven motivation to build scalable enterprises that align with regional and national economic goals.

Drivers of Non-Farm Sector Employment in Rural Bihar

Kajal Verma PhD Scholar, Patna University, Patna, Bihar, Research Scholar (JRF)

Sweta Sharan Assistant Professor, Patna University, Patna, Bihar, Assistanat Professor

The present paper attempts to analyse the recent development in non-farm sector in rural Bihar. Unit level data from Employment and Unemployment Survey (EUS) for the years 1983, 1993-94, 1999-2000, 2005-06, and 2011-12 while from Periodic Labour Force Survey (PLFS) data for the year 2018-19 and 2023-24 were taken to explore the trend and pattern of rural non-farm employment along with unemployment within educated youth. It also examines the quality of jobs available in the rural areas of Bihar. Determinants affecting the participation in farm and non-farm employment separately for male and female have also been studied using multinomial logistic regression model.

The main findings suggests that stunted growth is observed within rural non-farm sector. Micro level determinants such as education level, technical education, technical and vocational skill and training, socio-cultural factors, family expenditure, liabilities in case of female (children and elderly people at home), household head gender, household head education, and place of their residence significantly influence the decision of participation in farm or non-farm sector. The income effect is observed in rich household, and the quality of jobs available along with low level of wages and social security compel youth to remain unemployed. Technical education remains at an extremely low level which further worsens the condition.

These findings suggest that proper investment in supply side of labour market in rural Bihar should be accompanied by a proper demand-side investment also. Policy maker should target to enhance the quality of labour supply (in terms of economic labour market which includes all type of labour) by increasing the investment in human capabilities through the investment in better infrastructure, education, skill and training including technical education. Demand side factors may be addressed by rural development through infrastructural buildings, industrialisation, and sustained structural transformation and formalisation of jobs by harnessing demographic dividend of rural Bihar.

Effect of Pension Shocks on Household Labour Supply

Mayank Kumar Yadav PhD Scholar, Indian Institute of Technology Jodhpur, Jodhpur, Rajasthan

Dweepobotee Brahma Assistant Professor, Indian Institute of Technology Jodhpur, Jodhpur, Rajasthan

This paper studies the impact of interruptions in pensions, referred to as pension shocks in this paper, on household labour supply in India. Pensions play a multidimensional role in household welfare, including reducing poverty and inequality, maintaining consumption smoothing in old-age, and supporting other household members across generations. In

India, only 12% of workforce is covered by formal pension schemes. The share of informal workers in the workforce is 88%, but only a marginal number of these individuals participate in contributory pension schemes. Despite these, interruptions in pension payments are common and such interruptions can have immediate and significant consequences for household economic behaviour.

To study this, we use high-frequency panel data from the Consumer Pyramids Household Survey (CPHS) collected by Centre for Monitoring Indian Economy (CMIE). We examine effects at both the extensive margin, which captures whether other members of household join the labour force, and the intensive margin, which captures whether existing working member increase their labour hours. To estimate causal impacts, we apply three counterfactual imputation methods including the fixed-effects counterfactual estimator (FEct), the interactive fixed-effects counterfactual estimator (IFEct), and the matrix completion estimator (MC). These methods are suitable when treatment has a reversal nature and are more robust to traditional two-way fixed effect and difference-in-difference (DiD) approaches, particularly in the presence of treatment effect heterogeneity and unobserved time-varying confounders.

Our results show that pension shocks increase labour supply through both a rise in the number of working household members and longer working hours. The number of working members increases by about 0.13, while time spent on work rises by approximately one additional hour per day. These findings suggest that households adjust labour supply to compensate for income losses by increasing labour supply as coping mechanism. From a policy perspective, these results underscore the importance of ensuring the reliability and timeliness of pension disbursements. Strengthening administrative systems to minimise delays can help prevent welfare losses among vulnerable households.

Employment Quality in India: Developing a Multidimensional Index

Swarup Roy PhD Scholar, University of Calcutta, Kolkata, West Bengal

The main research challenge is the absence of a comprehensive measure for employment quality in India. Existing studies rely on single indicators, such as wages or formal employment status, which do not capture the multidimensional nature of job quality. This research aims to explore following key questions: How can we measure different facets of job quality? What proportion of workers are disadvantaged across multiple aspects of their employment? And which factors—such as income, stability, or working conditions—most significantly affect overall employment quality? The study seeks to develop an Employment Quality Index (EQI) that identifies the areas where workers in India face difficulties, providing a more detailed understanding of employment quality.

The study uses the 2023-24 Periodic Labour Force Survey (PLFS) data, focusing on wage and salaried workers to ensure consistent and comparable indicators. The paper constructs

the EQI using the Alkire-Foster methodology, which is widely used for multidimensional poverty indices. It assesses job quality across three main dimensions: labour income, employment stability, and employment conditions. The study establishes definitive cut-off thresholds to determine when workers are considered "deprived" in each specified dimension. For instance, a worker who makes less than two-thirds of the median wage is deemed to be lacking in income, and someone who has a casual or short-term contract is considered to be lacking in job stability. The final EQI score is a composite index that adds up the individual deprivations and gives each of the three dimensions the same weight.

The methodology also involves calculating a number of metrics, including the headcount ratio (H), which shows the percentage of workers who are lacking in at least one area of job quality. The average deprivation intensity (A) indicates the severity of deprivations for those affected. At the same time, the adjusted headcount ratio (M0) combines the number of affected people and the seriousness of deprivations into a single figure. The results show that a lot of people in India are stuck in low-quality jobs. About 85% of wage workers in India are considered "multidimensionally deprived", which means they are lacking in at least one crucial area of job quality.

The study underscores gender disparities, indicating that female workers experience greater deprivation across all dimensions in comparison to their male counterparts. Educational attainment significantly influences job quality; individuals with lower educational levels are more prone to encounter subpar employment conditions, whereas those with higher academic qualifications tend to achieve superior employment outcomes. Furthermore, rural workers face more severe job quality issues than urban workers, often working in informal and insecure jobs. The result indicates that job quality in India remains a major concern, with many workers earning low wages, facing unstable employment, and working in poor conditions.

Policymakers can utilise the EQI to pinpoint problem areas and plan targeted interventions. The study calls for policies that increase wages, improve safety, and enhance working conditions, especially for women, rural workers, and those with less education. The findings demonstrate that improving existing jobs is just as crucial as creating new ones to achieve inclusive and sustainable economic growth.

Unemployment Rate in India: A Critique

Preksha Mishra Assistant Professor, University of Delhi, New Delhi

Surajit Das Assistant Professor, Jawaharlal Nehru University, Delhi, Delhi

It hardly needs any emphasis that for any decent development paradigm, unemployment remains a key target variable; accurately capturing the same particularly with the changing dynamics of the world of work remains a crucial exercise. As per the Periodic Labour Force Survey (PLFS), the unemployment rate in India has been declining since 2017-18, measured

through both Usual Status (US) and Current Weekly Status (CWS). The CWS unemployment rate nearly halved from 8.9% to 4.9% between 2017-18 and 2023-24. Prima facie, this can be considered as a testament to India's growth trajectory. However, it is pertinent to note, these unemployment rates also showed a decline during the period covering the COVID-19 induced lockdowns — a stringent one between April-June 2020, followed by another during April-June 2021.

In 2019-20, the CWS unemployment rate remained constant at 8.8% and even declined to 7.5% in 2020-21. This is surprising as it seems to imply such a huge humanitarian crisis only had a miniscule impact on the employment and income of the population despite these lockdowns and the subsequent halting of economic activities. It is our contention that such a scenario emerged due to the inadequacy of current definition of employment under CWS criteria (which is just 1 hour of engagement in 7 days preceding the date of survey, with or without any payment). In fact, a strong exogenous shock like COVID wherein unemployment manifested in terms of loss of work hours as well as substantial loss of earnings, the present definition of employment proved inadequate to capture the ground reality.

Against this backdrop and using COVID-19 as a case study, this paper seeks to evaluate the adequacy of the current definitions of unemployment in capturing the challenges in India's scenario of work. Using unit-level PLFS data, the paper re-assesses 'productive' employment as being inevitably linked with income and hours worked.

TECHNICAL SESSION **2.15**

How can Education Change the Scenario of Female Labour Force Participation? An Analysis of Rural Indian Women using Periodic Labour Force Survey Data

Abhishikta Banerjee PhD Scholar, University of Kalyani, Kalyani, West Bengal

Archita Ghosh Professor, University of Kalyani, Kalyani, West Bengal

The latest released data of Periodic Labour Force Survey (PLFS) (2023-24) shows that women's labour force participation rate (LFPR) and work force participation rate (WPR) are 31.7% and 30.7%, respectively, which are the highest since the liberalisation in 1991. These rates were only 17.5% and 16.5% in 2017-18 according to usual status considering women of all ages. Naturally this upsurge of women's participation in the labour market in only six years has created a curious issue. The rising trend of LFPR of women between 2017-18 and 2023-24 raised several questions about the methodology and also the quality of employment. Against this backdrop, we try to explore the determinants of labour force participation among Indian rural women in this paper. Using two rounds of PLFS data (2018-19 and 2023-24) and the probit model, we find that the age, level of education, marital status, social group, religion, earning per capita of household, household size, highest level of education of male members in the household, are the significant determinants of rural women's LFPR according to principal status. Other than these variables, presence of working females in the household and presence of females doing only household duty in the household positively affected women's participation, whereas presence of children under 5, old male members, girls belonging to the age group 5-14 years doing domestic duty, and regular salaried male members depressed their participation. The probit result also reveals that the district-level WPR of women and unemployment rate among graduate women of previous year left a positive impact on current year's LFPR of women.

To investigate the impact of the determinants on LFPR of rural women with different level of education we run the probit model with the same set of variables for six group of education level (illiterate, literate up to primary, middle/secondary, higher secondary, graduate and post-graduate and above). The interesting finding is that most of the variables become insignificant for the women with higher level of education, mainly after higher secondary, which indicates

that the determinants of women's labour force participation differ across levels of education. We also find that the calculated average marginal effects of some significant variables which negatively affected LFPR of rural women (marital status, earning per capita of the household and the highest level of education of male members of the household) are reduced between 2018-19 and 2023-24. This partly explains the causes of rising rural female participation over time.

Piety and Precarity: Income Challenges of Madrasa-Trained Clergy in Religious Occupations

Anwar Ahmad Ansari PhD Scholar, University of Delhi, New Delhi

Despite their significant role in sustaining religious and social life in India, madrasa-trained clergy including imams, muazzins, and maktab (elementary school) teachers, and people in other religious occupations remain among the most economically vulnerable groups in the labour market. Often working on meagre remuneration, lacking job security, social protection, and opportunities for upward mobility, these religious professionals struggle for a livelihood that remains underexplored in labour economics and education-employment research.

Borrowing from the secondary sources, including government surveys, sociological and educational studies, reports from think-tanks, and other community organisations, this paper reviews the conditions of madrasa-educated clergy in India. The paper deploys a narrative review synthesising secondary sources: peer-reviewed books and articles; government surveys, occupational standards, and global wage reports; programme documents; legal materials and authoritative reporting on arrears, state schemes, and court actions. The purpose is to highlight the existing recurring patterns in the economic conditions of madrasa-trained clergy, situating and analysing them within broader frameworks of informal labour and precarious work. It traces the gap between the essential religious services they provide and the economic recognition they receive in return. The analysis places madrasa-trained clergy within the context of wider debates on informal labour, employability, and skill acquisition. It also draws a comparison of the situation of Indian clergy with Muslim clerics in select countries, outlining the systemic barriers to decent work, and finally proposing policy interventions for economic dignity and integration into wider frameworks of labour rights and labour welfare.

This paper concludes that their challenges are not merely issues of individual hardship but represent broader labour economics concerns of informalisation and underemployment. And finally opens up the avenues of tracing income and migration trajectories of Madrasa-trained clergy, and further probes the deeper social implications other than the financial factors only, which burdens this sub-group as latent biproducts of precarity.

India's Female Labour Force Participation: An Analysis of the Gendered Burden of Unpaid Work

Sohini Mahapatra Assistant Professor, National Law University Odisha, Cuttack, Odisha

Arjyalopa Mishra Associate Professor, National Law University Odisha, Cuttack, Odisha

A country's active labour force is a propeller in its economic growth and development. Within the labour force, the female labour force participation rate (FLFPR) is all the more significant as it reflects not only the economic progress but is also a mirror of the social fabric that is prevalent. The number of women active in the labour force is an indicator of gender parity and progressiveness of a society. Not only does India have a plethora of labour legislations, with several provisions as well as independent statutes targeting welfare of female employees, it is also vigorously making a mark for itself in a globalised economy. However, with regard to FLFPR the country is witnessing a steady decline, as reported by International Labour Organization (ILO) Gender Gap Statistics as well as the World Bank data.

This paper analyses the trends of FLFPR in India by assessing the data of Periodic Labour Force Survey (PLFS) since its inception in 2017-18 to 2023-24 as well as the data reported in ILO Gender Gap Statistics. The paper analyses the rural and urban trends in female employment, the kind of work they are engaged in, and co-relates it with gendered role of women in the society. It also explores the different factors and challenges affecting FLFPR, specifically the gendered division of unpaid work. The female workers' population rate, the unemployment rate, and FLFPRs are testament to the fact that even though women are engaged in several work sectors in various capacities, their proportion in the labour force participation is much lesser compared to their male counterparts, further solidifying the societal role that is cast upon them. The rural and urban data show contrasting trends thereby making one ponder upon the role of women in this divide. The paper ultimately supports the idea that stereotypical roles of women need to be broken in order to see them rise in the organised workforce.

Correlating Women's Economic Empowerment and Education: Avenues and Horizons.

Anupam Kumari PhD Scholar, Patliputra University, Patna, Bihar, Research scholar

Women entrepreneurs are making remarkable progress, overcoming obstacles, and transforming various industries. An important element fuelling this advancement is education. Beyond simply gaining knowledge, education equips women with the skills, self-assurance, and connections needed to thrive as entrepreneurs.

This paper examines the diverse ways in which education empowers women entrepreneurs and supports their achievements. Unfortunately, in many developing regions around

the world, including India, women are frequently deprived of educational opportunities. Moreover, education fosters critical thinking and problem-solving abilities, which are vital for entrepreneurs who need to adapt to changing market conditions, identify opportunities, and devise innovative solutions. Through their studies, women can develop a strategic mindset that enables them to make informed decisions and effectively lead their ventures. Education plays a pivotal role in empowering women, as it boosts their entrepreneurial skills and improves job prospects, especially for women.

This paper explores how promoting women's empowerment is essential for both economic and social advancement, as women entrepreneurs generate more employment among females in comparison to males. The z-test was used to study the mean difference between the two groups. The group was classified as a whole, and the mean was calculated as the average number of males and females employed by 350 women entrepreneurs. The data were further analysed for significant differences using a z-test at a 0.05 level of confidence interval (CI). The average of female employees based on gender is significantly greater than that of males, $z = 2.18$, $p = 0.0167$.

The analysis indicates that businesses led by women are likely to hire more women, underscoring the impact of female entrepreneurs in enhancing female workforce participation. The importance of education in fostering women's entrepreneurship is immense. It equips women with the necessary knowledge, skills, confidence, and connections to launch and expand successful businesses. By prioritising education and ensuring equal opportunities, we can empower more women to enter entrepreneurship and generate employment, which will promote innovation and stimulate economic growth.

Investigating Gender Wage Gaps in India through Centred Unconditional Quantile Regression Decomposition

Samapriya Trivedi Assistant Professor, Amity University, Lucknow, Uttar Pradesh
Shambhavi Mishra Assistant Professor, University of Lucknow, Lucknow, Uttar Pradesh

The study investigates gender wage disparities in India by examining employees across public and private sector enterprises using advanced distributional methods. It employs centred Unconditional Quantile Regression (UQR) with the Recentred Influence Function (RIF), combined with decomposition analysis and bootstrapping, to capture inequality patterns more comprehensively than conventional mean-based approaches. Drawing on unit-level data from the Periodic Labour Force Survey (PLFS) 2023–24, the analysis quantifies wage gaps across the earnings distribution, separates explained and unexplained components, and highlights structural determinants of inequality. The methodological novelty lies in the centring of variables, which eliminates distortions arising from arbitrary reference categories in categorical regressors and ensures that coefficients align directly with unconditional means.

This refinement not only improves interpretability but also avoids misleading baselines standard in conventional regression models. Coupled with bootstrapping, the framework produces robust inference by providing reliable standard errors and confidence intervals, thereby strengthening the reliability of decomposition outcomes.

Findings reveal persistent heterogeneity in gender wage gaps. Younger men face penalties across quantiles, while younger women gain relatively at higher quantiles. Rural women continue to experience steep disadvantages, and caste-based disparities remain visible, particularly among Scheduled Tribes and Scheduled Castes. Although education and technical training enhance earnings, they do not eliminate disparities, since men consistently receive higher returns for equivalent human capital. Public sector employment offers significant wage premiums across all quantiles, in contrast to private enterprises, where managerial discretion exacerbates inequities. Decomposition analysis reveals that wage gaps are primarily driven by coefficient effects—differences in returns—rather than by individual characteristics. Women with equivalent endowments remain undercompensated. Centred UQR-RIF reveals a pronounced "sticky floor" effect, with disparities most severe at the bottom of the distribution, while also moderating exaggerated top-end penalties implied by non-centred models. The persistence of unexplained wage differentials underscores systemic discrimination and institutional bias.

The study concludes that while education and skills narrow gaps, structural reforms such as pay transparency, more vigorous equal pay enforcement, and targeted support for disadvantaged groups are essential to address entrenched inequality.

Labour Market Deregulation and Reallocation: Evidence from India

Sarthak Basu Assistant Professor, Manipal Academy of Higher Education, Bengaluru, Karnataka

In recent years, select Indian states have undertaken labour market reforms aimed at increasing labour market flexibility by easing restrictions on hiring and firing specifically for medium-sized plants, simplifying compliance procedures, and promoting formal employment. This study investigates the impact of labour market deregulation on industrial employment, wage rates, and within industry labour reallocation. Using plant level panel data from the Annual Survey of Industries (ASI) and using a difference-in-differences approach, the findings of our study reveal that the reforms led to significant improvements in employment levels and wage rates across the states that implemented reforms. In addition, the reforms facilitated labour reallocation within industries, indicating a more efficient utilisation of labour resources and the potential for enhanced aggregate productivity. This reallocation appears to stem from a reduction in labour distortions for more productive firms, likely driven by the relaxation of hiring and firing restrictions. These results highlight the role of labour market flexibility in contributing to efficient resource allocation and productivity gains.

Exploring Structural Transformation in India in terms of Intergenerational Occupational Mobility

Shrabana Mukherjee Senior Research Fellow, Jawaharlal Nehru University, Delhi

Social justice suggests that while everyone may not have the same outcomes, everyone must have the same opportunities. From the point of view of a race, not everyone will win the race. However, the chances of winning the race should depend more on the participant's practice and efforts, and not on any other pre-determined factors. That is what the social and liberal thinkers refer to as the 'theory of equal opportunity.' Unfortunately, there are myriad circumstances associated with the accident of birth, such as, gender, caste, religion, place of birth, physical disabilities, sexual identities, and so forth. In this paper, the researcher aims to study only those factors that violate equality of opportunity that are passed down from parents to their children (from one generation to another).

Intergenerational mobility redefines the concept of inequality by highlighting the theory of equality of opportunity by measuring an individual's wellbeing relative to the socio-economic status of his/her parents. For policymakers, fully comprehending the extent of equality of opportunity in a country is crucial to introduce policies. High intergenerational mobility suggests that individuals have an equal chance of succeeding (or failing) irrespective of social origins, and depending on individual efforts. In contrast, low intergenerational mobility indicates that children will closely replicate their parents' position in the socioeconomic hierarchy, suggesting the persistent influence of the advantages of birth. India is an interesting case study for policymakers to understand the extent of intergenerational mobility across all strata and formulate targeted policy interventions due to its heterogeneity. It is more about pinpointing where the stickiness lies and eliminating the same accordingly.

The objective of this paper is to explore whether there has been a significant structural transformation in terms of occupation between parental and children's generations within a household in India. The occupational categories to be considered are: primary, low-end manufacturing, high-end manufacturing, construction, low-end services, and high-end services. Thus, the paper attempts to study if there has been an outward shift from primary to other occupational sectors between generations within a household. The paper also aims to understand which occupational categories have witnessed the most intergenerational occupational mobility. A comparative analysis will be done on the basis of caste. The idea is to investigate whether India's economic growth and its associated occupational transformation have reached out to everyone or have remained concentrated in certain caste and religious categories only. The study will be based on secondary data sources.

Labour and Development in Bihar: Towards Viksit Bharat 2047 FROM Education to Employability: Comparative Analysis of Skill and Education Integration in Indian States

Simran Kaur Dhillon PhD Scholar, Jamia Millia Islamia University, New Delhi

Abstract: The given paper focuses on the connection between education and skill development systems across the states of India. It influences the employability of marginalized populations that represent Scheduled cast (SC), Scheduled Tribes (ST), Other Backward Class (OBC), Persons with Disability (PWD), Muslims, Minorities, and EWS groups. This was achieved using the secondary data through Principal Component Analysis (PCA), where the first principal component (PC1) represents the performance of the state grants in a composite index manner. K-means was used to cluster states into three groups of levels of inclusion. A Fixed Effects Model of Panel data showed different effects of educational and skill upgrading variables on employability, indicating the different challenges to meet across states. Although a $R^2 = 1$ points to an over-fitted process, the model has notable directional tendencies. The results highlight the necessity of purposeful, inclusive policies, stronger data governance, and inter-sectoral integration to achieve better labour market results concerning marginalised groups and ensure equitable development at the state level in India. Furthermore, a skill development index is formed using AISHE data and a DiD model revealed that the treatment group saw 310-unit higher participation increase post-intervention compared to control. Summary: The proposed research focuses on education and skills development integration in different states of India with the application of sophisticated quantitative tools, such as Fixed Effects Panel Regression, Difference-in-Differences (DiD) regression, Principal Component Analysis (PCA) and Cluster Analysis. The study forges ahead with an emphasis on the impact of socio-economic and demographic variables that include Scheduled Castes (SC), Scheduled Tribes (ST), Other Backwards Classes (OBC), Persons with Disabilities (PWD), Minority and Muslim Populations, and Economically Weaker Sections (EWS) on the Skill Participation Index (SPI) in the span of a decade in Indian states. The Fixed Effects model shows that even though a strong statistical fit is provided ($R^2 = 1.00$) due to uncontrolled multicollinearity among predictors, the results cannot be utilized in the inference. This uses PCA, with the first principal component (PC1) being able to justify a total of 96.77 percent of the variation, thus presenting the multidimensional data using a simplified and powerful representation. A 3-state cluster with PCA scores as a variable reveals that states that do not impact policies much and have low socio-economic indicators, such as Nagaland, Sikkim cluster into Cluster 1, outperforming Uttar Pradesh (Cluster 2), and decently integrated states with persistent issues, such as Jharkhand and Odisha cluster in the middle, in Cluster 3. The DiD regression also confirms the success of targeted interventions in terms of using skills. The causal effect of the program was confirmed in that the treatment group had higher participation after the intervention, but it was statistically significant. However, the research points to the usefulness of evidence-based methods in policy assessment. Applications of PCA-derived indices and DiD approaches

are deemed helpful in the realignment of policies that can mirror the genuine distribution of inclusion, making educational and skill development planning a lot more strategic and intentional, across states of India. The methods are applied to model trends of participation over time, evaluate causal effects of treatments, simplify multivariate data by dimensionality reduction, and cluster states based on performance. This quantitative mixed method offers strong, policy-relevant conclusions regarding structural inequality and program adequacy.

Growth Without Jobs: Tracing the Gendered and Social Impacts of Jobless Growth in India

Umesh Kumar Yadav PhD Scholar, Jawaharlal Nehru University, New Delhi

The persistence of a high share of workers in agricultural sector share in rural India, and a high share of urban sectors in services in the urban sectors has been an obsti-nate feature of the Indian economy and has been a hotbed of intense debates for the last 3â€"4 decades. Agriculture, despite its declining share in the output, continues to absorb around half the rural workforce. Services on the other hand, despite its high, and increasing share in the output, has failed to generate employment com-mensurate to its output share. Overall, the analysis of the employment scenario in India, especially after the 90s, has tried to decode the patterns in growth of output and employment, the dichotomy between the two, and has come up with concepts such as â€™growth sans employment,â€™ â€™jobless growth,â€™ â€™job-loss growth,â€™ â€™feminization of the workforce,â€™ and plethora of such concepts to this end. Of particular interest has been the trends in the participation of rural women in the labour market and workforce, especially in the capacity of â€™subsidiaryâ€™ workers, mostly in the agricul-tural sector. It has been one of the most crucial factors in the swelling as well as of dwindling in the size of the workforce. The paper attempts to adopt a longue duree approach in engaging with issue of jobless/job-loss growth, feminization of the workforce and reversal in feminization in certain periods, by undertaking a rigorous analysis of NSSO surveys from 1990s till present. In an attempt of locate some of the reasons, specially that of agrar-ian distress and poverty-pushed employment, Situation Assessment Survey data has been used to capture the changing agrarian relations as well as the nature and intensification of the agrarian distress. While doing so, the methodological lim-itations of these surveys in capturing the extent of employment, methodological changes exacerbating some of these issues have been discussed at length. The tri-angulation of Employment-Unemployment Surveys, Situation Assessment Survey and the Census data throws light on the persistence on the agrarian distress and the preponderance of precarious employment in the non-agricultural sector. The evidences arrived at in this analysis weight heavily towards the view that the peri-odic inclusion and exclusion of the women and other socially deprived groups in the workforce are no mere periodic phenomena, on the contrary, they are the man-ifestations of the aggravation of the crisis in an economy of which rural distress, and precarious work in rural centres, are perennial features.

TECHNICAL SESSION 2.16

Impact of Labour Market and Unemployment on Crime Rates and Criminal Behaviour with Special Reference to Jharkhand

Akhilesh Kumar Jha, IPS IG cum Director, Jharkhand Police Academy, Hazaribagh, Jharkhand

Gary Becker in his seminal work presented economic theory of crime where criminal as rational person tries to maximise his utility by indulging in criminal activities. Criminal takes into consideration his income from illegal activities and opportunity cost of losing legal income from employment. If employment opportunity available is low for him he will be more inclined to move towards criminal behavior. Various empirical work has been done thereafter in which impact of labour markets and unemployment rates on crime rate have been studied. It has been found in these studied that unemployment rate and in efficient labour markets make positive and significant contribution to crime rates and criminal behaviour, especially to crime against property. It has also been found that lack of long term employment has stronger influence on crime rates than that of short term unemployment. If the labour market is not functioning smoothly for criminals, which is otherwise so because of stigma attached to criminal activities, then criminals are more reluctant to go for legal work and remain in criminal activities. In this paper, we have tried to study, with the help of primary survey on convicted accused persons, the impact of availability or absence of employment opportunities on criminal behaviour. Whether, decision to indulge in criminal act is due to absence of definite and reliable source of income or economic factors do not make any impact. Our hypothesis is that, as found in earlier empirical studies, employment will be a significant factor in criminal behaviour.

Rational Disengagement in the Labour Market: A Game-Theoretic Framework for Quiet Quitting

Jyotsna Rosario Assistant Professor, Vidyashilp University, Bengaluru, Karnataka

This paper looks at quiet quitting as a rational and strategic form of disengagement in today's workplaces. Rather than viewing it as laziness or rebellion, we frame it as a predictable outcome of weak incentives, incomplete contracts, and unspoken psychological expectations

between employers and employees. Using a simple game-theoretic model, we explore how mismatches between effort and reward, combined with limited monitoring and recognition, can lead to stable patterns of minimal effort. The framework brings together insights from labour economics, game theory, and workplace psychology to explain why quiet quitting happens and strategies around it. The study positions the employment relationship as a principal–agent problem, where employers (principals) seek to maximise productivity while employees (agents) balance wages, recognition, and wellbeing against stress and burnout. The payoff structure reveals that when employers provide wellbeing support and employees respond with motivation, both achieve high returns—a cooperative, win–win outcome. However, if employers neglect wellbeing while continuing to demand effort, employees rationally retreat into quiet quitting as a protective strategy, creating a low-level equilibrium with reduced productivity. This dynamic demonstrates that disengagement is not random but the result of rational utility maximisation under misaligned incentives. By integrating psychological costs into utility functions, the model extends traditional labour economics to capture modern workplace realities. The findings suggest that quiet quitting is not simply a behavioural trend but a structural equilibrium outcome shaped by organisational choices. The analysis highlights that while employers may gain short-term savings by cutting wellbeing programmes, the long-term consequence is diminished motivation and efficiency. The paper concludes that understanding quiet quitting through a game-theoretic lens helps bridge disciplinary boundaries and provides actionable insights. Firms that align incentives through fair pay, recognition, and supportive work conditions can shift equilibria towards higher engagement and productivity. For policymakers, the model emphasises the importance of frameworks that protect employee wellbeing to reduce systemic disengagement. Overall, the study reframes quiet quitting as a rational response to workplace structures, offering both theoretical depth and practical guidance for navigating the evolving future of work.

Labour Laws and Employment Vulnerability during COVID-19: Evidence from India

Mir Audil Bashir Research Scholar, Islamic University of Science and Technology, Kashmir, Jammu and Kashmir

Showkat A. Bhat Assistant Professor, Symbiosis School of Economics, Pune, Maharashtra

Irfan Ahmad Sofi Assistant Professor, Islamic University of Science and Technology, Kashmir, Jammu and Kashmir

This study investigates whether labour laws protected workers from job losses during the COVID-19 crisis in India, focusing on informal workers and marginalised groups. Using nationally representative panel data from the Consumer Pyramids Household Survey (CPHS) and three labour law indices, we compare employment outcomes across states with stricter versus more

flexible regimes. Results show non-regular workers experienced greater job losses (74.62%) than regular workers (62.98%), with marginalised castes suffering almost double the decline of upper castes. Surprisingly, states with stricter labour laws recorded higher job losses, suggesting weak enforcement undermined their protective role.

The findings highlight the limited efficacy of labour laws during economic shocks and underscore the need for policy measures aimed at formalising the employment of vulnerable groups trapped in precarious work. These findings also suggest India may have a plethora of labour laws on paper, but they are less meaningful in practice, apparently due to poor implementation and enforcement. These results support the buffer hypothesis, indicating that employers use temporary workers as a flexible buffer and indulge in labour segmentation of vulnerable groups to absorb fluctuations in market demand. Further, surprisingly, states that are believed to have stricter labour laws on paper witnessed higher job losses, highlighting that the weak enforcement on the ground undermined the intended protective role of labour regulations.

Policy makers must incentivise employment of vulnerable groups in the formal sector and offer adequate job security to address their labour market inequalities. The government can promote formalisation and reduce labour market segmentation among vulnerable groups by providing financial support to firms through partial coverage of employers' contributions to the Employees' Pension Scheme (EPS). It can also reserve special quotas for these groups in government-funded apprenticeship and skill training programmes.

Skill Development and Vocational Education at the School Level: Challenges and Opportunities in Arunachal Pradesh

Rinchin Dorjee PhD Scholar, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

Vocational training has become a significant development tool in the 21st century. With the complex and changing technological era, the interplay between formal education and the demand for skilled individuals in various sectors has become a high-priority concern among academics and policymakers. Globally, vocational courses in the formal schooling system are increasingly recognised as a key driver of economic development and a critical determinant of sustainable growth and prosperity. For India, "Learning by doing" within the formal education system is deeply rooted back to the pre-independence period. Today, India has created a multilayered vocational education system, consisting of formal (school, college, Polytechnics, and ITIs) and non-formal (short-term skilling training and apprenticeships). And most recently, the National Education Policy (NEP 2020) has laid great emphasis on skill development, vocational training, and competency integration into the formal education system starting from 6 grade onwards, followed by more comprehensive skill subjects at secondary and senior secondary levels designed to shape students' skill development. With strategic investment in

vocational training for the youth population, the development process can be significantly accelerated, further broadening the country's development trajectories.

India finds itself in a unique position wherein both the employers in need of skilled workers and the employment-seeking population face persistent challenges due to skill gaps and skill mismatch. This raises concerns about the effectiveness of such policies across states with differing socio-economic conditions. Arunachal Pradesh has made remarkable progress in the field of education, despite being a late starter. However, the absence of a broad industrial base and a continued dependence on agriculture have exerted high pressure on the services sector, particularly government employment. Therefore, the persistence of youth unemployment in Arunachal Pradesh remains a critical barrier, restricting the state's overall economic growth.

The study examines the current status of formal education, skill development, and vocational training in Arunachal Pradesh, further evaluating the challenges that hinder the rational implementation of skill development and vocational education in schools. The study is based on both primary and secondary data. The primary data were collected through focused group discussions by purposively selecting eight schools within the capital region, which include schools located in rural and urban settings around Itanagar and Naharlagun. For a proper representation, both private and government schools were taken under study. The analysis of the primary data was carried out with the help of thematic analysis. The secondary data was collected from various government sources, including Basic Information on Higher & Technical Education, Unified District Information System for Education Plus, Statistical Abstract of Arunachal Pradesh for various years, Census 2011, Directorate of Higher & Technical Education, existing literature, and other published reports.

The study identifies key interrelated barriers, where geographical isolation is one of the primary barriers to the efficient delivery of vocational education in Arunachal. Despite the introduction of vocational courses in schools, Arunachal faces a serious shortage of trained and subject-specific instructors. The collaboration between schools and industry remains underdeveloped, showing weak industry-school linkages. Further, the narrow range of trades (Tours & Travels and Information Technology) offered under vocational education limits the students' opportunities to pursue skills training aligned with their diverse interests. Despite the progress in expanding formal education, the state continues to face challenges such as low enrollment and high dropout rates at the secondary and higher secondary levels. As a result, many students exit the formal education system before they can access skill-oriented courses, weakening the skill base for the future workforce and obstructing human capital formation and employment opportunities.

The study highlights that sectors such as agriculture, handloom, handicrafts, and tourism hold significant potential for localised skill development, their integration into the school curriculum however, remains limited. The vocational education at the school level should be flexible, inclusive, and context-driven. Strengthening the linkages between schools, local enterprises, and government development programmes, while creating pathways for internships, apprenticeships, and self-employment opportunities, can generate employment and foster a culture of a self-reliant economy.

Green Jobs, Just Futures, and Livelihoods in Climate-Stressed India

Asmi Raza Professor, University of Delhi, New Delhi

As India grapples with the promise and dangers that decarbonisation holds, the discussion on 'green jobs' cannot be conducted within techno-statistical boundaries; it must also take place within debates around justice, resilience, and transformation. This paper critically engages the shifting terrain of green labour in an India increasingly at ecological risk while bringing into focus the intersections of labour, environment, and equity. Long story short, the paper researches how green jobs are conceived and put into practice. It also examines the central clusters—renewable energy, sustainable agriculture, circular economy, climate services—based on policy initiatives in the past few years, sectoral drivers, and local innovations. It puts forth that although green work may resuscitate the rural and urban livelihoods of green jobs, its transformational potential depends on three indispensable conditions: (1) participation of subsistence and informal workers in green value chains, (2) integration of social protection and learning into climate policy packages, and (3) institutionalisation of care, commons, and community-based adaptation as green spaces of work. It also studies the normative construction of "just futures", in opposition to the technocratic construction of transformation. It is through participatory planning, dimensions of intergenerational justice, and place-based policies, that ecological knowledge and dignity of work re all referred to and respected. It's based on examples from exposed areas: drought-stricken districts, delta spanned by floods, corridors of urban heat.

This paper argues that green livelihoods are bargained at local levels, often at the expense of not being recognised or appropriately supported, and finally, that India's green transition needs to be reframed as a labour-centred, justice-minded agenda. It calls upon policymakers, researchers, and practitioners to get over the focus on job figures and adopt a broader vision of work that is ecologically regenerative, socially equitable, and economically stable. This will help policymakers address challenges in the global labour market.

Is there Rank Premium in the LabourMarket? Analysis of Occupational Prestige Differentials In India

Ravikiran Naik Assistant Professor, FLAME University, Pune, Maharashtra
Samvardhini Ravindra Research Assistant, FLAME University, Pune, Maharashtra

Research on labour market disparities has made significant contributions across various fields, yet the application of occupational prestige analysis to stratification economics in the Indian context remains understudied. This study employs stratification economics theory to analyse disparities by caste, gender, and geographical location using nationally representative data

from Periodic Labour Force Survey (PLFS) for the year 2024.

Our analysis reveals significant negative occupational prestige differentials for historically marginalised castes (Scheduled Caste, Scheduled Tribe, and Other Backward Classes), with these groups consistently scoring lower. Women experience substantial occupational prestige penalties compared to their male counterparts, while rural workers demonstrate significantly lower prestige scores relative to urban counterparts. Critically, these disadvantages compound intersectionally, with women from marginalised castes in rural areas facing the most severe occupational stratification.

These findings demonstrate that occupational hierarchies in India operate through deeply embedded social and structural inequalities that extend far beyond human capital differences. This provides empirical validation of stratification economics theory in a context characterised by persistent structural inequalities. Our results challenge conventional economic explanations focusing on individual characteristics and highlight the inadequacy of human capital-based policy approaches. Instead, effective interventions require comprehensive structural reforms that directly address institutional discrimination, occupational segregation mechanisms, and the social valuations underlying prestige hierarchies.

This study advances stratification economics literature to the developing country context by demonstrating how traditional status systems intersect with contemporary labour markets to reproduce systematic inequality across multiple axes of stratification. We argue that a more comprehensive stratification economics approach is essential for understanding how social institutions perpetuate occupational segregation and status hierarchies in India. Such differentials have profound implications for social mobility, resource distribution, and life chances, creating nested systems of social inclusion and exclusion that require targeted policy interventions beyond traditional human capital development approaches.

Future work will analyse the occupational prestige differentials across the Industries and whether natural experiment/event could alter standings in the labour market.

Studying Development to Understand Market as a Facilitating Institution for Rural Income Enhancement in a Middle Income Economy like India

Munish Yoginder Alagh Associate Professor, Sardar Patel Institute of Economics and Social Research, Ahmedabad, Gujarat

This paper surveys the evolution of the study of Classical Theories of Development through the lens of development literature in context of middle-income economies. The Classical Theorist particularly discussed is Adam Smith for his original insight and remarkably prescient ability to develop the concepts of "specialisation" and "division of labour". The main concepts from

Smith include: importance of capital accumulation in the development process; outline of the stationary state, in which the rate of profit is low, wages per worker are near the subsistence level, and rents are high; the real prices of manufactured commodities tend to fall and the real prices of some type of agricultural products tend to rise during the process of development; condemnation of governmental interference in the development process; and conception of economic development as a gradual, self-perpetuating (within limits) process.

The relevance of these concepts to middle-income countries such as India is: prioritised investments towards transformation of focused sectors of the economy such as rural infrastructure backed with deeper-rooted investment in process based changes in ground agency (as discussed above in rural areas); awareness of the state of subsistence from which rural income of certain groups such as marginal farmers needs to be enhanced; an emphasis on increasing value added in terms of trade moving towards agriculture, not just through higher output prices but greater efficiencies; and a need for participatory governance to evolve towards a self-perpetuating equitable system of support with income benefits to the rural population.

This framework is then outlined in terms of certain features of operational feasibility of ground level programmes in rural India. Particularly the focus is in terms of effectiveness in working towards market facilitation while ensuring equitable access to the (rural) population.

Precarity Behind the Platform: Wages, Insecurity, and the Lived Realities of Food Delivery Workers in Hyderabad, India

Anuj Shukla Master's Student, National Institute of Technology, Rourkela, Odisha

Partha Pratim Sahu Associate Professor, National Institute of Rural Development and Panchayati Raj, Hyderabad, Telangana

The platform economy has swiftly transformed the contours of urban employment in India, offering new livelihood opportunities for low-income, migrant, and semi-skilled individuals navigating an increasingly volatile labour market. Food delivery work, mediated through platforms such as Swiggy and Zomato, has become emblematic of this shift, merging digital infrastructure with on-demand service provision. While platform labour is frequently promoted as flexible, entrepreneurial, and technologically empowering, these narratives obscure the lived trade-offs that workers face, including the absence of job stability, inadequate social protections, and limited access to career advancement tools.

This paper examines the lived realities of food delivery workers in Hyderabad, a key urban hub of the gig economy, based on 25 in-depth interviews conducted in June 2025. The findings reveal a complex and precarious livelihood shaped by unstable earnings, algorithmic oversight, and systemic invisibility. Workers navigate wage fluctuations, long and irregular working hours, and opaque management practices that rely on ratings, incentives, and penalties to control

performance. Despite their essential role in sustaining urban service economies, most remain outside the ambit of reliable social security, effective grievance redressal, or meaningful opportunities for skill development. Importantly, the research underscores that such forms of gig work raise fundamental questions about their long-term sustainability as a career path. With stagnant wages, minimal upward mobility, and no structured avenues for skill upliftment, workers often find themselves in a cycle of economic survival without prospects for professional growth.

Many interviewees described their work as "just for today", reflecting a constant state of insecurity, where daily earnings determine immediate survival and the future remains uncertain. This resonates broader critiques of platform capitalism, which externalises risks onto workers while limiting their bargaining power and institutional protections. Current legal frameworks, including the Code on Social Security, 2020, and emerging state-level interventions such as the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Act, 2023, and the Draft Telangana Gig Workers (Registration, Social Security, and Welfare) Bill, 2025, signal incremental progress in recognising platform workers as a distinct category. However, implementation remains partial, and these measures have yet to address core concerns such as wage volatility, fair compensation for distance-based work, and transparency in algorithmic management.

The paper argues for urgent policy reforms in wage-setting mechanisms, enforcement of minimum earning guarantees, establishment of independent grievance redressal bodies, and increased algorithmic transparency. Addressing these gaps is essential not only for safeguarding worker rights but also for ensuring the long-term sustainability and equity of India's rapidly expanding platform economy. By centring workers' voices, the study contributes to ongoing debates on the future of work, highlighting the need to balance innovation and profitability with fairness, dignity, and social protection.

Intergenerational Education Mobility and its Determinants in India: A Comparative Study of Kerala and Tamil Nadu

Libitha C PhD Scholar, Jawaharlal Nehru University, Thiruvananthapuram, Kerala

Intergenerational mobility in education remains a key marker of social progress. However in India, the persistence of caste-based inequalities raises critical questions about the role of the family and the state in shaping educational outcomes. Focusing on a comparison between Kerala and Tamil Nadu, this paper examines how caste and parental education influence children's schooling trajectories, particularly in a context where caste continues to determine one's educational attainment. It also seeks to examine whether state interventions could mitigate the parental transmission effect of educational attainment on children. An analysis of transition matrices for intergenerational educational mobility across castes, using father-son

pair data from IHDS 2011, reveals significant caste disparities across regions. General castes experience greater upward educational mobility compared to others. In all regions, sons of fathers with higher levels of education are more likely to maintain the same educational level, with a higher persistence rate observed among these groups. In identifying factors influencing intergenerational educational mobility, the analysis highlights that both caste and a father's years of schooling play a significant role. Even after accounting for various factors such as per capita income, age, and other variables, caste and paternal education remain significant determinants. A closer look across age cohorts shows that the influence of a father's education, per capita income, and caste is less pronounced among younger cohorts compared to older ones. This suggests that non-hereditary factors, particularly public education initiatives and reservation policies, are increasingly shaping educational attainment levels. From a policy perspective, these findings underscore the importance of public education in promoting higher levels of educational mobility and reducing caste-based disparities. Strengthening such initiatives could further diminish the intergenerational transmission of educational inequality.

Rural Transformation and Workforce Dynamics

KEYNOTE PAPER

Structural Transformation and the Employment Problem in India

Gaurav Datt, Associate Professor, Department of Economics, Monash Business School, Monash University, Caulfield East, Australia

What is the nature of the employment problem in India and how is it related to India's thwarted structural transformation? How do we conceptualize the structural transformation process, and is it a natural concomitant of economic growth? Is India an outlier to the traditional historical trajectory of structural transformation? What are the potential impediments to structural transformation in India? Is agriculture the residual sector or does it have a significant role in economic development? Does a broader view of structural change offer a wider menu of policy tools to spur economic growth? These are the motivating questions that this paper tries to grapple with. The paper itself is more in the nature of a discussion rather than a research paper, limited to offering a set of observations on these interrelated questions with some supportive data for India.

TECHNICAL SESSION **3.1**

Blind Spots in the employment data: Underemployment and Circulating Migrant workers

G C Manna Professor, Institute for Human Development, New Delhi

Balwant Singh Mehta Professor, Institute for Human Development, New Delhi

Sudipto Mundle Chairman, Centre for Development Studies, Thiruvananthapuram, Kerala

Two blind spots in the employment data handicap assessments of the status of employment in India: missing official estimates of underemployment and circulating migrant workers. It is well known that in developing countries like India unemployment is often disguised, i.e., underemployment rather than open unemployment, because survival requires poor workers to accept whatever little work they can get, even if or a pittance. Despite this there are no official estimates of underemployment even though very detailed information is collected. In this paper we have prepared underemployment estimates based on the available data & suited to Indian labour market conditions. PLFS Current Weekly Status schedule Block 6 provides data on hours of work for each family member in a sample household for every day of the week. We use this data to present alternative time based estimates of underemployment based on different assumptions. Ourmiddler estimate , i.e., difference between labour supply and hours actually worked by all workers, amounts to 10%. This is similar to 10.6% estimated from the recent Time Use Survey for Normal Days, pointing to robustness of our method of estimation. We also present separate estimates of underemployment for regular workers, casual wage workers, self-employed workers and for men and women. The level of underemployment is actually negative for regular wage employees, indicating they work overtime, while it is very high at 15.7% for casual wage workers. Underemployment is very low for men while very high for women. This suggests that LFPR for women is low because they withdraw from the labour force due to limited availability of work. To assess circulatory migration, surveys can be conducted for such workers. Also the period of "normal" can be redefined or respondents asked about circulating family members

India's Growth Momentum and its Rural Imprint: Evidence from Arunachal Pradesh

Vandana Upadhyay Professor, Rajiv Gandhi University, Itanagar, Arunachal Pradesh
Ashi Lama Associate Professor, Rajiv Gandhi University, Itanagar, Arunachal Pradesh
Kanchan Devi Researcher, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

India's economic liberalisation ushered in a phase of sustained gross domestic product (GDP) growth and deeper integration with both domestic and global markets. However, this aggregate progress has been geographically uneven. Urban centres and coastal states have emerged as major growth poles, while peripheral regions, particularly in the Northeast, have captured only limited benefits. These disparities are reflected in persistent poverty, weak infrastructure, and restricted livelihood opportunities in rural areas, even as the national economy expands. Understanding these imbalances requires moving beyond traditional notions of rural development towards the broader concept of rural transformation. Rural transformation encompasses structural shifts in social, economic, institutional, and spatial arrangements rather than mere improvements in income or services. It involves processes such as diversification of employment, feminisation of labour, declining reliance on subsistence agriculture, and evolving aspirations shaped by connectivity and market integration. Yet, these changes have not been uniform, with regional outcomes mediated by geography, history, and institutional capacity. With nearly 70% of India's population still residing in rural areas, a share expected to remain above 50% even by 2050, understanding how growth translates into rural change is essential for inclusive development.

Arunachal Pradesh illustrates this paradox vividly. Despite achieving an average gross state domestic product (GSDP) growth rate of 6.2% between 2012 and 2022, higher than the national average, its economy remains largely agrarian, with limited industrialisation and service-sector activity. Distress-driven employment persists, and human development indicators, such as a literacy rate of 65.4% and a 77.0% rural population share, highlight ongoing gaps in basic capabilities. These disconnects between growth performance and rural well-being makes the state an important site for analysing how economic momentum affects frontier regions. Although rural transformation in India has received increased scholarly attention, much of the literature focuses on infrastructure growth, livelihood diversification, and institutional reforms at the national level. Northeastern states, and Arunachal Pradesh in particular, remain underrepresented in both empirical datasets and theoretical models. This knowledge gap limits an understanding of how growth is reshaping rural economies in geographically isolated and institutionally constrained settings.

This study addresses this gap by analysing rural transformation in Arunachal Pradesh over the period 2001–2023. Using both secondary data and primary evidence, it examines changes in education, infrastructure, livelihoods, and service delivery. Guided by framework,

rural transformation is treated not merely as economic expansion but as a multidimensional process involving social and institutional change with spatial and cultural consequences. The study investigates three core questions: What are the principal dimensions and drivers of rural transformation in Arunachal Pradesh? To what extent has economic growth translated into equitable outcomes across rural areas? And what lessons can inform future planning for marginal and frontier regions of India?

Labour Deployment, Redundancy, and Earnings in Agriculture

Sarthi Acharya Professor, Institute for Human Development, New Delhi

Ankita Goyal Assistant Professor, Council for Social Development, New Delhi

This paper examines labour use in agriculture across different crops and states during 2004–2022, and trends in wage rates of hired workers in agriculture. There has been surplus labour in agriculture South Asia, especially India. A rapid reduction in it would on the one hand signal rise in labour productivity if the yield rates stay steady or rise, and the surplus workers labour could be deployed in relatively high value-adding non-farm sectors on the other. This is the classical thesis, put forward by W Arthor Lewis in the 1950s among others, and not seriously questioned until today.

The analysis in the paper draws upon the Cost of Cultivation database compiled by the Ministry of Agriculture and Farmers' Welfare: this being an annual collection of data on inputs and outputs in 23 crops and 20 states across the country. This database has so far been scarcely deployed for analysing issues in labour, and it is believed that new data for assessing the labour situation will throw new dimensions hitherto not much examined. In this sense, this could be termed a data-mining exercise for assessing whether it is possible to look at data sources other than National Sample Survey (NSS)/Periodic Labour Force Survey (PLFS), in the mainstream of labour studies.

The analysis has been carried out for 15 crops, in places individually but at others, grouped. The findings indicate declining labour use in several crops, especially high-value ones such as paddy, wheat, and sugarcane, which are largely concentrated in relatively more developed agricultural regions. By contrast, coarse grains and other lower-value crops cultivated in less developed regions show only a modest decline. The study also points to a growing reliance on hired labour over time, as landowners increasingly divert their own efforts toward more lucrative non-farm activities, while hired workers remain a relatively low-cost option. Finally, although real wage rates have registered a modest increase, they remain close to subsistence levels.

Gender Dynamics in Clean Energy Transition in Rural India

Govind Kelkar Visiting Professor, Institute for Human Development, New Delhi, Executive Director and Professor, GenDev Centre for Research and Innovation, Gurgaon

India's commitment to achieving net-zero emissions by 2070 has brought renewed attention to the intersection of clean energy transition, gender justice, and rural development. While policies promoting clean cooking fuels and renewable energy have expanded access, their gender-transformative potential remains uneven. This study examines how India's clean energy transition affects women's health, employment, agency, and decision-making within households and communities, with a focus on both clean cooking energy and the solar sector. The launch of the Pradhan Mantri Ujjwala Yojana (PMUY) in 2016 marked a major effort to shift poor rural households away from biomass fuels by providing LPG connections in women's names. Although coverage expanded rapidly, sustained use remains limited. Low refill rates indicate widespread fuel stacking, with biomass continuing as the primary fuel for many rural households. Rising refill costs, men's control over household finances, limited rural access, and persistent gender norms have constrained the programme's health and productivity benefits for women. More recently, the solar sector has emerged as a promising avenue for gender-inclusive energy transition. Government schemes such as Surya Ghar and KUSUM, along with initiatives like Solar Sakhi Abhiyan, have created opportunities for women as solar technicians, entrepreneurs, and community educators. Several states and private companies have introduced women-focused training and employment models, demonstrating potential for skill development and income generation. However, women remain significantly underrepresented in technical training and formal employment within the solar workforce. Structural barriers include limited access to technical education, finance, asset ownership, safe mobility, and social protection, alongside the continued burden of unpaid care work. The study highlights that access alone is insufficient to achieve gender-just energy transitions. Without addressing affordability, intra-household power relations, skill gaps, and gendered labor norms, clean energy policies risk reproducing existing inequalities. A genuinely transformative approach requires gender-responsive planning, sex-disaggregated data, targeted skill development, and institutional support that recognizes women not only as beneficiaries, but as active agents in India's clean energy transition.

Time Use Patterns in Rural India: A Gendered and Agroecological Perspective, 2019–2024

Anjani Kumar Senior Research Fellow, International Food Policy Research Institute., New Delhi

Seema Bathla Professor, Jawaharlal Nehru University, New Delhi

Dhiraj K. Singh Independent Researcher/Economist, ., Ghaziabad, Uttar Pradesh

Smita Sirohi National Professor, ICAR-National Institute of Agricultural Economics and Policy Research (NIAP), New Delhi

Nalini Ranjan Kumar Principal Scientist (Agril. Econ.), ICAR-National Institute of Agricultural Economics and Policy Research (NIAP) Dev Prakash Shastri Marg, New Delhi

This paper investigates gendered shifts in time use among working-age individuals in rural India across agroecological regions between 2019 and 2024, using nationally representative data from two rounds of the Indian Time Use Survey. We analyse changes in time allocation for work, domestic chores, learning, and leisure, with a specific focus on sectoral differences between agricultural and non-agricultural activities. Employing regression models and Gelbach decomposition techniques, we quantify the contribution of demographic, socioeconomic, and spatial factors to observed trends. Our findings reveal modest increases in women's labour participation and paid work, particularly in agricultural activities such as livestock, while gender disparities in non-agricultural employment and unpaid domestic work persist. Education and per capita consumption are strong predictors of transitions into non-farm work and learning activities, while landholding remains a key determinant of continued engagement in agriculture. Although some progress has been made, women continue to bear a disproportionate dual burden of paid and unpaid labour. Spatial patterns highlight significant heterogeneity: female participation in agriculture is higher in rainfed and irrigated zones, while non-farm work remains concentrated among men in arid and coastal regions. The decomposition results suggest that improved education, income, and dwelling infrastructure explain a substantial share of time-use shifts, yet structural and institutional constraints remain. These findings underscore the need for targeted, gender-sensitive, and region-specific rural employment strategies to enhance livelihood diversification and reduce gender inequalities in time use.

Growth, Structural Transformation, and Female Time-Use in Rural India: 1998-2020

Sapna Goel Assistant Professor, University of Delhi, New Delhi

Female labour force participation (FLFP) rates in rural India have consistently been falling since 2004-05. The FLFP rate in rural India declined from 33.3% in 2004-05 to 18.2% in 2017-18

(National Sample Survey [NSS] 2004/05, Periodic Labour Force Survey [PLFS] 2017-18). The very high burden of domestic duties has been one of the key factors responsible for this phenomenon. Domestic duties, which are part of a broader category of social reproduction, are very crucial for the production sphere and the burden of such activities falls largely upon women.

Social reproduction involves making food, clothing and shelter available, providing care, and performing various other physical and emotional labour that are necessary for maintaining and reproducing society as a whole. In this sense, domestic duties such as cooking and care activities are some of the key processes that enable a worker's participation in the production sphere. Official employment-unemployment surveys (EUS) in India largely neglects the labour performed by women in the domestic sphere and underestimate women's work in the production sphere. Largely women in India are concentrated in those areas of work which are more susceptible to invisibility, such as subsistence production, domestic work, voluntary work, and informal work. Women who are engaged in domestic duties only or engaged in free collection of goods, sewing, tailoring, weaving for household use are not considered as part of the labour force by NSS-EUSs. However, activities such as free collection of goods, sewing, tailoring, weaving etc., are part of the production boundary as per United Nations System of National Accounts (UN-SNA). Therefore, NSS-EUS underestimates the extent of women's participation in economic activities.

There are strong linkages between the production and social reproduction spheres in any economy. In the last two decades, India has seen a process of structural transformation in terms of a fall in the share and number of workers engaged in agriculture and allied activities. With economic growth, the reallocation of resources from agriculture to other productive sectors is usual and there exists extensive literature that examines the eï¬€ect of such changes on the nature and extent of women's labour force participation in India. However, in the discourse on structural transformation and women's work, it is crucial to examine both production and reproduction spheres. Women's disproportionate burden in reproduction activities such as cooking, cleaning, and caregiving limits their participation in production sphere.

Using Time Use Survey data from 1998 and 2019, we analyse the determinants of time rural women spend in non-SNA activities during a period of high economic growth and structural change in India. The pooled cross-section regression reveals three key findings. Firstly, marital status significantly impacts women's time in non-SNA activities, with married women spending more time than unmarried women, showing a "marriage penalty." Secondly, women with primary or secondary education spend more time in non-SNA tasks than those without education. Thirdly, women employed in agriculture or non-agriculture sectors spend less time in these activities. These factors influence men's non-SNA time as well, though to a lesser extent.

TECHNICAL SESSION **3.2**

Rural Transformation and Workforce Dynamics: The Absence of a Classic Agrarian Transition, and its Impact on Class Relations across the Rural-Urban Divide in India

Jens Lerche Professor, SOAS University of London, London, England

This paper aims to contribute to our understanding of what the absence of a classic agrarian transition in India means for class relations across the rural–urban divide. It first sets out its general perspective on what it argues is a bypassing of the agrarian transition at the all-India level and shows that this has had a significant impact on cross-sectoral class relations. A longitudinal caste study of two villages in Uttar Pradesh follows, fleshing this out further. It is argued that there are distinct class, caste, and gender specific class reproduction patterns across the agrarian-non-agrarian and rural-urban divides, and that these cannot be understood from a sector specific approach, be it an 'agrarian' or a 'non-agrarian/manufacturing' approach. Cross-sectoral social classes have emerged, rooted in the erstwhile sector specific classes. Rural households have become multilocal. But whereas for some, this has involved the expansion of their capital accumulation strategies, for others, it has led to the further cheapening of their labour-power across the sectors, as caste/tribe based oppression keeps them at the bottom of the socially and economically segregated employment hierarchy, also within the 'modern' sectors. The village study shows clearly that land owning castes get more secure, better paid often supervisory jobs in the private sector, and have much easier access to government jobs. Whereas Dalit groups overwhelmingly end up in informalised insecure poorly paid jobs. The paper concludes by suggesting that in order to grasp class relations under neoliberalism without a classic agrarian transition, we need a class analytical approach that focuses on relations of exploitation and accumulation per se, and to avoid any *a priori* foregrounding of either agrarian or non-agrarian approaches and sectors. This also means that sector-specific categories such as 'the peasantry' and 'the proletariat' are losing their relevance, while the more encompassing concept 'classes of labour' becomes more useful.

Changing Maternal 'Busyness' and Declines in Child Mortality in the Past and in the Present

Alaka Basu Visiting Scholar, Department of Sociology, Uris Hall, Cornell University, New York, United States

In contrast to the preoccupation with gender in the literature on child mortality in developing countries, in the historical demography of the West, women are barely mentioned in debates on falling child mortality. Instead, the focus is largely on the relative roles of economic development and progress in medicine. However, the historical literature on social change has much to say about the changing 'ideology' of the family and especially on the rising domestic demands on women's time and attention. These changes must have contributed to improvements in health and mortality if one extrapolates from the literature on women's roles in contemporary child mortality declines. I combine the literature on maternal roles and child mortality in the developing world with that on ideological changes around maternity in the past to suggest that good child health outcomes often depend on new rules of intensive mothering rather than an expansion of the autonomy of women. We thus need supportive public health policies to lessen rather than increase maternal responsibility for child health if we really care about women's empowerment.

Rural Transformation and Harvesting Workers in India: A Comparative Perspective on Two High Value Crops in Maharashtra

Sukhpal Singh Professor, Indian Institute of Management, Ahmedabad, Gujarat

Rural India has witnessed significant amount of transformation despite the presence of agrarian distress across the states. However, this transformation remains inequitable and exclusive in nature, especially for large number of marginalised communities, one of which is crop harvesting workers. Therefore, it is imperative to address this issue by examining the nature of impact of rural transformation on the harvesting workers, especially in high value crops.

This paper examines the work and livelihoods of harvesting workers in two high value crops of sugarcane and grapes. They are also different from each other in that one is significantly export oriented (grape) while the other is more domestic demand driven. While one has plenty of policy support (sugar) and co-operative presence, the other is more privately driven. The paper analyses the mechanism of labour engagement and their work and living conditions besides the very important gender dimension of work and livelihoods. It is found that harvesting alone took 37% of all person days in sugarcane production and provided maximum number of person hours of work per unit of sugarcane area. However, sugarcane harvesting workers are not treated as employees by sugar mills who do not take any responsibility for them due

to the subcontracting/outsourcing system for workers for this activity which is well established and perpetuated over the decades. They are exploited by various players in the value chain driven by sugar factories in Maharashtra including gender-based exploitation in extreme forms. On the other hand, in grapes which also followed outsourcing based harvesting practice, the harvest labour was only male. Further, since the grape sector was more export orientated, there were somewhat better conditions for harvesting workers and more perishable nature of produce could give more bargaining power to workers by creating structural power for workers in the presence of seasonal shortage of harvest workers. However, such power was absent as workers were not organised. Both the crops had the presence of labour contractors embedded in the local geographies of commodity production who were seen as both facilitators as well as exploiters of workers though the mechanism of organising the labour under contract system was more professional in grapes than that in sugarcane sector. The grape exporters only engaged in minimum interface with farmers as required due to certification systems, that is smallholder group certification and traceability requirements, which were indirectly enforced by supermarket buyers. On the other hand, sugar mills continue with traditional labour contractor system which has layers of exploitations between the mill and the individual sugarcane harvesters. Some of the sugar mills have also resorted to mechanical harvesting of cane to avoid labour troubles. Women harvest workers in sugarcane create their own informal social spaces which give them some agency as workers who can resort to everyday micro level practices or everyday acts of collective resistance as all other stakeholders in sugarcane around them are men.

Who Operates the Land? A Study of Landholding Pattern among Female Cultivators in India

Jayanti Kajale Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra
Indu Dahiya PhD Scholar, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Achieving gender equality is one of the Sustainable Development Goals (SDGs) of the United Nations. An important dimension of this goal is equal rights to land ownership. It is observed that though women cultivators across the globe are extensively engaged in the household agricultural activities, the extent of land ownership among them is very low. Secure rights over the agricultural land are considered crucial for the access it provides to resources, extension services, and technological know-how. It also provides the incentive for investing in agricultural activities, which can lead to enhancement of yields and income of the cultivators and therefore the cultivating households. In the case of India, women cultivators form a significant proportion of the total female workforce in rural areas. The workforce however, is characterised by a very low extent of land ownership. Research studies, therefore, have underlined a need for policies which provide secure land rights, which ultimately would lead to higher agricultural productivity and incomes.

In view of this, the major objective of the paper is to examine the pattern of operational landholdings in India by gender, social class, and size of landholding. It also studies the state-level variations in the number as well as the area of land holdings operated by female cultivators. The study is based on Agricultural Census reports, which provide data relating to operational landholdings, which are the basic units of decision making and most of which are wholly owned and operated by the cultivators. The analysis shows that though the share of number and area of landholdings operated by female cultivators is increasing over the census years, it is still very low. In 2015-16, overall, 14% of the total landholdings were operated by female cultivators and the share of area under these landholdings was only 12%. A Similar pattern was observed for not only all the social classes such as Scheduled Caste (SC), Scheduled Tribe (ST), and All, but also for all land size classes as well. The data also revealed a declining share of number as well as area under female operated holdings with increase in the size of land holdings. Thus, share of female cultivators in the 'large' category was lowest in terms of the number of landholdings and area under landholdings as compared to other categories. An examination of state-wise variations clearly indicated higher share of female operational holdings among the southern states as compared to the northern states. The variation in the states however indicated week correlation with socio-economic variables used for calculating gender development index and gender inequality index. This thus indicates the existence of region specific differences in socio-economic, administrative factors and in implementation of various development programmes. Creating awareness about secure property rights and implementing women centric schemes would empower them to become a visible part of the food supply chains and contribute to enhancing livelihood security.

Mechanisation, Precarity, and Rural Transformation: Rethinking Women's Work in Kerala's Coir Spinning Cooperatives

Reshma Chandran Research Scholar, Indian Institute of Technology, Madras, Tamil Nadu
Binitha V Thampi Professor, Indian Institute of Technology, Madras, Tamil Nadu
Shankar Krishnapillai Professor, Indian Institute of Technology, Madras, Tamil Nadu

The coir industry has historically provided livelihoods for rural women in Kerala, with cooperative societies playing a critical role in sustaining employment and promoting social protection. In recent years, pressures from mechanised production in neighbouring states and global market competition have prompted Kerala's coir sector to adopt technological upgrades, particularly in the spinning segment. In Kerala, the coir industry operates through both cooperative and private modes of production, each with varied outcomes for workers. In the cooperative mode, workers are part of producer societies where they work together and share the benefits, often with the help of the government. These societies aims to overcome worker exploitation by middlemen and give small producers better opportunities.

This paper examines how changes in the coir industry intersect with broader processes of rural transformation and workforce restructuring, drawing on survey data from 158 women workers across ten spinning cooperative societies in Kerala. The study examines shifts in labour demand, wage stability, skill requirements, and work intensity, alongside the socioeconomic implications for women workers who rely on cooperative employment. Findings suggest that while mechanisation represents a significant technological shift, its benefits in terms of income security and work quality have been uneven and often disappointing. In many cases, workers often pointed out that while mechanisation has led to higher production, it has also increased the strain of work, with little reflection in their earnings or job stability. Instead of producing clear improvements, it has been accompanied by continued wage uncertainty, heightened work pressures, and growing challenges for workers to remain in cooperative employment. The paper argues that rural transformation in the coir sector is not only about technological progress but also about the reconfiguration of workforce dynamics, skills, and gendered vulnerabilities within an all-women workforce, where the gains from cooperatives and mechanisation have been limited.

Commuting, Spatial Flexibility and Urban Wage Premium: Evidence from India

Ajay Sharma Professor, Indian Institute of Management, Indore, Madhya Pradesh

This study examines the wage returns to spatial flexibility through commuting in India using the Periodic Labour Force Survey (PLFS) 2022-23 and heteroskedasticity-based instrumental variables approach. The research analyses wage premiums for rural-urban and urban-rural commuters, testing both wage level and wage growth effect hypotheses proposed by Glaeser and Mare (2001). Against the backdrop of India's rapid structural transformation, where rural-urban commuting has dramatically increased from 6.34 million in 1993-94 to 49.73 million in 2022-23, this analysis provides crucial insights into spatial labour market dynamics.

The methodology employs an augmented Mincer wage equation with Heckman sample selection bias correction to address potential endogeneity concerns. The heteroskedasticity-based instrumental variable approach, popularised by Lewbel (2012), addresses endogeneity issues when traditional economic instruments are unavailable. The study focuses on workers aged 15-59 years, excluding self-employed individuals to avoid self-reporting bias in earnings data.

Key findings reveal that rural-urban commuters earn a 6.8% wage premium over their rural non-commuting counterparts, while urban-rural commuters receive no significant premium. The study confirms the existence of both wage level effects (immediate wage gains from urban work locations) and wage growth effects (higher returns to education in urban markets) in Indian labour markets, providing novel evidence for developing country contexts

and supporting agglomeration economy theories. Heterogeneity analysis uncovers important disparities across demographic groups. Women demonstrate the highest gains from spatial flexibility, with rural-urban female commuters earning 21% higher wages compared to rural women, substantially exceeding the 7.8% premium for men. This suggests commuting can serve as an important channel for reducing gender wage gaps and promoting women's economic empowerment through expanded labour market opportunities.

Social group analysis reveals significant variations in returns to mobility. Other Backward Caste (OBC) workers gain 12.9% wage premiums from rural-urban commuting, while Scheduled Caste/Scheduled Tribe (SC/ST) workers receive statistically insignificant returns, highlighting persistent inequalities in labour market access and mobility benefits across historically marginalised communities. Sector analysis shows formal sector rural-urban commuters command an 8.5% premium, while informal sector premiums are negligible (0.6%). These findings suggest that while spatial mobility through commuting offers pathways to higher earnings, benefits are unevenly distributed across gender, social groups, and employment sectors.

The study contributes novel evidence on compensating wage differentials for rural-urban mobility in developing countries and provides crucial policy insights for improving regional labour market integration through enhanced connectivity and transportation infrastructure development.

TECHNICAL SESSION **3.3**

Gender Disparity in Agricultural Labour Market: A Study in Flood-Prone Coochbehar District

Parmod Kumar Professor, Institute for Social and Economic Change, Bengaluru, Karnataka

Dipanwita Chakraborty Consultant, Institute for Social and Economic Change (ISEC), Bengaluru, Karnataka

In Indian male-dominated rural society, there is a belief that male labourers are much more productive than female labourers. Based on this belief the female agricultural labourers are usually paid less than their male counterparts. Given insufficient alternative non-farm employment opportunities available suiting women in the rural milieu, they lack good bargaining power and have no choice but to accept the exploitative wages. This is the general prevalent rural picture and Coochbehar, an important agricultural district of West Bengal, one of the leading agricultural States of India, forms no exception. During the period of COVID-19, a large number of people, hailing from rural and engaged in casual non-farm works, suddenly found themselves jobless due to the unexpected closure of unorganised/informal economic activities. Interestingly during the pandemic, it was only the agricultural sector which recorded a positive growth of 3.6% gross value added (GVA) at basic prices in 2020-21, when the growth rate of all other economic sectors experienced conspicuous deceleration. As a consequence, migrants labourers started crowding-in farm sector in strife of viable livelihood option and subsequently the population of agricultural labourers began expanding in the villages creating a severe demand-supply imbalance and a concurrent exacerbation of female farm labour wage exploitation specifically given their further declining opportunity cost.

Post-COVID period of 2021-22, when the field work was carried out in Coochbehar, the rural study region witnessed 4% rise in wage rate for male and 5% increase in wage rate of female, as immigrated labourers started moving out with resumption of economic normalcy. However, when this gender specific hiked wage rate was compared with the computed Value of Marginal Productivity of labours (VMP) by gender (individually for *kharif* and *rabi* crop-paddy), results showed that while the extent of difference in contribution of male and female in paddy cultivation varied between 5-7%, female suffered from 30% higher under-payment than male, which vividly suggests utter gender wage exploitation by farmers taking advantage of over-crowding in agriculture. With regard to gender wage gap, in terms of VMP, women should have

been paid more than male and that male-female gender wage gap should have been negative with regard to the *kharif* paddy crop in the region. However, the gender wage gulf remained positive and persisted at a 25%. In fact, when taking into consideration State fixed Minimum Wage Rate (Statutory wage rate), the prevailing wage rate for both male and female during the reference period of study was also noted to be much less than the State Government fixed statutory wage rate (8% under-payment for male and 35% for female) reiterating farm wage exploitation and more importantly gender based wage inequity. In the face of financial crisis, 41% of the respondent farm labourer households, underpinned resorting to multiple private borrowing, which subsequently led them to sell off of their minimal households' assets and become further impoverished. Subsequently there was occurrence of 2023-24 devastating flash flood in North Bengal, including the study area. To understand, flood effect on farm wages by gender, again field level data was collected from the same set of sample respondents across gender. Findings suggested floods exacerbate existing gender disparities in the labour market, leading to more significant decline in women's farm wages compared to men's, as women are disproportionately affected in agricultural sectors. Results further showed that female workers experienced a greater drop in cash wages (by more than 9%) after floods despite getting hired more because of their easy acceptance of lower wage rate (without much negotiation), an imperative need of farmers in that hour of calamity (flood) confronting economic loss. As a result female farm labourers suffered more income loss from floods. This situation worsens labour market disparities and highlights the increased vulnerability of women in rural areas, requiring targeted interventions to improve their adaptive capacity.

Does Contract Farming Generate Rural Employment? Revisiting Workforce Dynamics in West Bengal's Potato Sector

Rajshree Bedamatta Professor, Indian Institute of Technology, Guwahati, Assam

This paper explores the intersection of agrarian transformation, contract farming, and rural labour markets in India, using the case of potato contract farming in West Bengal under PepsiCo's arrangement. Against the backdrop of India's structural transformation, wherein the rural economy is witnessing a gradual but uneven shift from agriculture to non-agriculture employment, this study interrogates whether contract farming (CF) can offer a viable alternative source of employment and income generation in rural areas. Drawing on both secondary and primary data, the paper situates the phenomenon of potato CF within broader debates on labour arrangements, intermediary control, and the corporate penetration of smallholder agriculture. Secondary data from the National Statistics Office (NSO) and the Periodic Labour Force Survey (PLFS) reveal that although rural India is undergoing sectoral shifts, the absorption capacity of non-farm employment remains weak.

In West Bengal, one of India's most agriculturally dense states, labour has moved slowly away from agriculture, with women continuing to show high dependence on the agricultural

sector. The paper finds that while the rural non-farm sector is expanding, it remains dominated by low-paying, unskilled construction work. This structural context forms the backdrop for the emergence of CF as a potential pathway for agricultural revitalisation and labour reorganisation. Using field data collected from Bankura and Hooghly districts through 263 structured household surveys, 12 focus group discussions, and 31 key informant interviews, the study critically assesses the implications of CF on employment and labour relations. It demonstrates that PepsiCo's potato CF operates through a multilayered intermediary structure comprising vendors and sub-vendors, who mediate between the corporation and smallholders. This arrangement allows the firm to exercise indirect control over production, inputs, and labour without owning land or directly employing farm workers. The intermediaries–acting as both facilitators and supervisors–derive commission-based income, thus creating new intermediary employment opportunities, albeit limited in scale.

Short-spells, Many Tasks: Rethinking Work and Worker in Rural India

Nripendra Kumar Mishra Professor, Banaras Hindu University, Varanasi, Uttar Pradesh

The question of magnitude of unemployment has generated very heated discussion in recent times, each side forwarding justification for their estimates based on secondary data sources, such as Periodic Labour Force Survey (PLFS), Labour Bureau, Consumer Pyramids Household Survey (CPHS), India Human Development Survey (IHDS), and Time Use Survey (TUS). Periodic Labour Force Survey however, is the most commonly used data source.

There are varied estimates as each of these data sources have their own definition and methodology. But, the world of work has gone through major changes in the last two decades. Definitions and methods being used by these sources does not satisfactorily captures these changes. For example, the design of PLFS fails to capture multiple activities and part time work, which has expanded in recent times. It assumes that 'usual' would have a unique answer. What if there are many activities and some of which are equally usual? This could have been a rare possibility in 1983 when National Sample Survey (NSS) shifted to this definition. But that is no longer so.

Also, having a definition of principal status and subsidiary status based on major time criterion or relatively longer time calls for rethinking with the changes in the nature of work. Someone who works for an hour for more than six months is classified as principal status worker and if less than six months but more than 30 days gets classified as subsidiary worker. Hours of work are not taken into consideration in this conception. Moreover, no one sits idle in rural India. Most of times he/she is doing something or the other economic activity. It could be many activities being done simultaneously or sequencing of activities with short spells. Full time work (and consequent full-time wage) is gradually diminishing in rural India, especially in agriculture. Not only rural non-farm enterprises but agriculture too is

primarily dependent upon part time family workers. In all likelihood, these part time workers are not fully captured in Usual Status (principal and secondary) (UPSS) of PLFS and they may get classified in 'not in labour force'. Even when they are classified as worker, this simply denotes under-employment, about which we do not have information from any secondary data sources. This is especially important for women workers who are combining domestic duty with some economic activity as part time workers. Non-introduction of hours of work in classification of different categories of workers leads to non-information about the of underemployment.

Employment and Earnings in the Non-Farm Sector in India: Vicissitudes of Work and Worker Categories

Mrinalini Jha Professor, O.P. Jindal Global University, Sonipat, Haryana

The paper investigates the evolving dynamics of employment and earnings in India's rural non-farm sector (RNFS) between 2017–18 and 2023–24, drawing on data from successive rounds of the Periodic Labour Force Survey (PLFS). Despite improvements in overall labour market indicators, such as rising worker population ratios, declining unemployment rates, and a reversal in the earlier decline of female labour force participation, the sectoral distribution of employment points to structural shifts within the rural economy. The urban share of total employment has declined by six percentage points during this period, accompanied by increases in both rural farm and non-farm employment shares, indicating a reversal of the Kuznets process. Within the rural economy, the proportion of farm and non-farm employment has remained largely stable, with non-farm activities accounting for around 43 percent of rural jobs. However, the composition of employment within the RNFS has shifted unfavourably. Self-employment, particularly unpaid family work, has increased, while salaried and casual employment have both declined. Real daily earnings in the RNFS, adjusted for inflation, have grown by less than 2 percent overall, with salaried workers witnessing an actual fall in real wages. The expansion of the RNFS is increasingly concentrated in low-paying construction activities rather than higher productivity manufacturing. Gender patterns reveal deepening inequalities. The rise in rural female labour force participation is primarily driven by increased engagement in farm work, as women's participation in the RNFS has declined. Between 2017–18 and 2023–24, female earnings have fallen even in real terms, contrasting with modest gains for men. The COVID-19 pandemic accentuated these disparities, marking a structural break from the pre-pandemic trends. Female employment in the RNFS is yet to recover after 2019-20. Overall, findings of the study highlights the residual nature of the RNFS and its limited role as a driver of rural growth, underscoring growing employment distress, especially among rural women.

From Stable Work to Fragmented Engagement: Women in Rural Labour Markets

Tulika Tripathi Associate Professor, Central University of Gujarat, Gandhinagar, Gujarat

From the early 2000s onwards, successive National Sample Survey (NSS) and Periodic Labour Force Survey (PLFS) rounds show falling or stagnating female labour force participation rates (LFPRs), especially in rural areas, and this pattern has often been interpreted as a withdrawal of women from economic activity (wealth effect) and participation in higher education (education effect). But a growing body of research suggests that this explanation is partly an artefact of how work is defined and measured, rather than a straightforward reflection of women's engagement with the labour market. Time-use data and qualitative studies indicate that large part of women's productive labour remain statistically invisible because they are of short-duration, home-based, or embedded in unpaid family work as is the case of self-employed worker.

Two related issues underpin this invisibility. Firstly, conventional labour force statistics in India are anchored in strict duration thresholds and status hierarchies. The "usual status" framework classifies an individual as a worker only if they are engaged in economic activity for a major part of the year (roughly 183 days), while short spells and secondary activities are relegated to subsidiary status or dropped altogether if the work spell is smaller, fragmented, and of fewer hours. Standard survey modules are poorly suited to capture multi-activity, intermittent, and unpaid work that is typical of women's contribution to rural household livelihoods. Recent re-analyses show that when broader definitions or time-use style measures are applied, women's labour force participation rates rise substantially, implying that a non-trivial share of women currently classified as "inactive" are in fact engaged in work-like activities. Secondly, rural livelihoods themselves have undergone profound change. Agrarian restructuring, the growth of non-farm informal work, public employment schemes and fluctuations in agricultural profitability have altered the availability, seasonality and quality of jobs. For women, this has meant a shift away from relatively stable, family-based agriculture or regular wage work towards more precarious combinations of casual labour, self-employment, unpaid family work, and household-based production. Time-use survey shows a substantial decline in hours of paid work for rural women, even though the proportion reporting themselves as "workers" has changed only marginally. This suggests not so much a retreat from the labour market as a reorganisation of work into more intermittent and low-intensity forms.

Against this backdrop, this paper argues that rural women in India are being reorganised into fragmented, low-visibility and short-duration activities that conventional labour force statistics fail to recognise. Using two rounds (1998 and 2017) of a longitudinal LSMS-style survey of 21 rural villages, we used detailed activity data to track changes in the structure and visibility of women's work over nearly one decades. The LSMS design records days and hours worked across multiple activities and statuses, allowing us to move beyond headline

"worker/non-worker" dichotomies and examine how women's labour is distributed across seasonal agricultural work, informal wage employment, self-employment, unpaid household production, and multiple short spells of work.

Methodologically, the analysis departs from standard NSS/PLFS approaches in two important ways. Firstly, instead of applying a rigid 183-day threshold to define a "worker", we implement an activity-sensitive "max-method" classification that uses the full distribution of days worked across all reported activities. Any non-zero work spell is recorded, and individuals are then grouped into principal stable workers (PSW), short-spell workers (SSW), part-time/ intermittent workers (PTW), and those classified as outside the labour force (NLF).

This paper examines how the structure and visibility of rural women's work has changed during 1998 to 2017. It also investigates how these changes have impacted on statistical visibility of women's work and how do patterns of "invisible" or under-counted work vary by caste, education, and household land status within the 21-village panel. Our analysis shows that the share of women in PTW rises sharply from 21.6% in 1998 to 34.7% in 2018, while the proportion in PSW remains extremely low and even declines marginally. This indicates that women's growing participation is structurally concentrated in short-duration and fragmented work rather than secure and continuous employment. At the same time, the proportion of women classified as NLF declines from 62.8% to 52.0%. This reduction does not reflect a shift towards stable work but rather a movement into low-intensity, irregular engagement. The decline in SSW and stagnation of PSW further reinforce the conclusion that the dominant reallocation has occurred towards PTW.

In effect, the observed rise in female LFPR is disproportionately driven by an expansion of intermittent work spells rather than substantive integration into stable labour markets. In contrast, the male distribution shows a more balanced shift. The share of male PSW increases alongside a decline in PTW, suggesting a partial consolidation of stable employment among men. Men experience a qualitative enhancement of employment stability that women do not. The changes observed in the structure of labour are not only gendered but they are deeply mediated by caste. At the aggregate level, women's increasing participation is concentrated almost entirely in part-time and intermittent work categories, with minimal expansion in principal stable employment.

The caste-wise breakdown shows that this feminisation of precarious work is most acute among Backward Class (BC)-agricultural and Scheduled Caste (SC)/Scheduled Tribe (ST) groups. These groups exhibit a marked expansion of PTW and persistently high shares in SSW, indicating that women's entry into economic activity is occurring under conditions of compulsion rather than choice, and within segments characterised by low returns and limited security. Among SC/ST households, the decline in PSW combined with the persistence of high SSW and rising PTW suggests that women's labour is increasingly absorbed into irregular and seasonal activities. Backward Class-agricultural households show a similar pattern. The significant rise in PTW within this group reflects the casualisation of women's agricultural

labour and increasing reliance on dispersed, short-duration tasks such as seasonal fieldwork, post-harvest processing, and unpaid family assistance. Here, female labour is linked closely to agrarian vulnerability and fluctuating income streams, with limited access to stable employment channels.

Upper and middle caste groups show high shares in NLF for both years, but this apparent non-participation masks divergent underlying realities. For men, inactivity may be associated with education or asset-based livelihoods, whereas for women it often reflects normative constraints on visible work, reinforcing the idea that "non-participation" cannot be read uncritically as economic dependency. In such groups, women's work is more likely to be embedded in informal family enterprises or household production that remains statistically under-recorded.

Taken together, the land and monthly per capita expenditure (MPCE) profiles indicate that economic stratification shapes not only whether individuals work, but the way they are incorporated into the labour process. Smaller landholding and lower consumption groups show evidence of labour compulsion, reflected in high shares of PTW and SSW. However, the expansion of PTW among middle landholders and middle MPCE groups suggests a diffusion of precarious employment beyond the poorest households. This pattern aligns with the broader narrative of labour reorganisation. Work participation is increasingly mediated by fragmented, low-intensity engagements cutting across asset and income groups, rather than by stable absorption into productive employment. Land and income thus no longer function as reliable buffers against employment insecurity; instead, they modulate the form of participation, with more advantaged groups displaying a greater capacity to opt out of visible labour without necessarily improving the quality of employment opportunities for those who remain active.

In this sense, the labour market exhibits a dual segmentation: one defined by economic compulsion among the poor, and another by selective withdrawal among the relatively affluent. Both processes contribute to the expansion of statistically invisible or unstable work, reinforcing the claim that the rural labour system is undergoing a structural transformation characterised less by exit from work and more by the casualisation and dilution of productive engagement.

Tenancy, Diversified Households and Investment in Indian Agriculture: An Analysis of NSSO 77th Round SAS Data

R Vijay Professor, School of Economics, University of Hyderabad, Hyderabad, Telangana

Nisha Patel PhD Scholar, School of Economics, University of Hyderabad, Hyderabad

Growth in the agrarian sector is essential for meeting food needs as well as a process to reduce poverty. One of the important sources of growth for the sector is investment decisions of the households. In addition to factors like irrigated area, access to credit, land owned area, family

size, the study examines the impact of diversification of employment within a households and tenant status of a households on farm investment. Studies on Indian agriculture are presenting evidences of the increasing importance of diversification households and tenancy status households in the rural areas. Do these characteristics have any influence on investment into farm business and farm machinery? The study utilizing unit-level data of 77th round NSSO Situation Assessment Survey. It uses Heckman selection model to explore the determinants of farm investment, particularly in agricultural machinery. The findings highlight the unequal pattern of household-level agricultural investment in India. While 60% of households invest in farm business, only 5.5% in productivity-enhancing investment such as tractors, harvesters. The analysis reveals employment diversification facilitates reinvestment into agriculture, but not necessarily into machinery. Pure tenant invests less in farm business and machinery compared to owner-cultivator, whereas mixed tenants invest less in farm business, but show no significant difference in machinery investment when compared to owner cultivators.

TECHNICAL SESSION 3.4

Empowered in Absence: Husband's Migration, Wife's Financial Autonomy, and Resource Allocation for Children in Rural West Bengal

Subrata Mukherjee Professor, Mumbai School of Economics and Public Policy, Mumbai

The absence of husbands due to migration, combined with the influx of remittances, often alters the dynamics of resource allocation within households, leading to an increase in women's autonomy. This expansion of women's autonomy and increased control over resources is expected to allocate more resources towards children's welfare, especially in terms of nutrition, healthcare, and education, thereby contributing to improved child well-being. Despite its relevance, evidence is almost absent in the Indian context.

This paper aims to bridge the evidence gap by conducting a primary survey of 750 married women from 20 villages across five districts in West Bengal. The study finds that remittances entrusted to women were primarily directed towards household necessities, including food, healthcare, education, loan repayment, and clothing. However, the implications of male migration for women's lives and household welfare are not unidimensional, and the allocation of remittances also reveals a complex pattern. While short-term spending tends to focus on food and health, our multivariate analysis suggests that households often reduce their investment in children's education during periods of active migration. Our study finds a rebound effect of migration and remittances: upon returning to their hometowns, households are more likely to channel their accumulated resources into their children's education. The restored presence of fathers and more predictable resource availability likely shift households' priorities towards future-oriented investments, particularly in children's education.

Our study highlights that the net effect of a wife's autonomy resulting from her husband's migration and remittances is complex and nuanced. Higher levels of female control over household decisions may not always result in increased welfare spending; instead, they reshape the composition of consumption in many situations. Our findings underscore that migration and remittances should not be viewed as a straightforward, linear mechanism for welfare improvement. Instead, they generate dynamic and evolving household strategies that vary across time and domains.

Women's Agency at Work: Examining Entrepreneurial Roles and Motivations

Divya Pradeep Associate Professor, Christ University, Bengaluru, Karnataka
Ipsita Sarkar PhD Scholar, Christ University, Bengaluru, Karnataka

There has been a significant rise in female labour force participation in India since 2017-18, rising from roughly 23.3 percent to 41.7 percent in 2023-24, largely driven by women's participation in rural areas. Much of this increase is attributed to a steady increase in the proportion of women in self-employment. We engage in an exploratory qualitative study in two specific market sites — one in Kolkata and the other in Bengaluru, to uncover the process dimensions of agency and the ways in which women negotiate their space both in the family and in the business. It also examines the resources at the disposal of women, specifically, their human and social capital and how they put them to use to navigate the structures of constraints imposed by patriarchal structures, kinship, and community norms. The study finds that economic distress is an important push factor to self-employment, where women work towards augmenting family income. However, despite that, we find that women constantly navigate patriarchal stereotyping of their ability to run the business. The world of business is perceived as alien to their capacities and they have to constantly negotiate with patriarchal norms to establish their credibility. The narrative analysis also revealed distinct ways by which women navigated the structures of constraints through subtle acts of manipulation, resistance, and negotiation. Finally, we also found that women's involvement in business was subject to shifting positionalities based on specific stages of their lifecycle. Young mothers gave primacy to child care responsibilities with social constructions of motherhood defining their priorities. But when businesses were either in the initial stages of being set up, or in some cases, about to fail and required family labour to succeed, women provided it without hesitation. The study underscores the importance of improving the agency of women, their mobility as well as their associational or civic ties in the community as it leads to better access to resources and greater participation and decision making in their business. Skill training plays an important role in improving their agency. Even when economic compulsions drive women to contribute to the enterprise activities, specific business skills acquired by them improves their perceived sense of self-efficacy and thereby their confidence to run the business successfully.

Collective Agriculture and Rural Workforce Transformation: A Case Study of Group Farming in Bhor and Velhe Talukas, Maharashtra

Varun Ramesh Miglani Assistant Professor, Symbiosis International University, Pune, Maharashtra

Shuchi Benara Misra Assistant Professor, Symbiosis International University, Pune, Maharashtra

Sneha Kumari Assistant Professor, Symbiosis International University, Pune, Maharashtra

Showkat A. Bhat Assistant Professor, Symbiosis School of Economics, Pune, Maharashtra

Small and women farmers in India face severe resource and poverty challenges. Group farming offers a possible solution. Research on collective farming models in India demonstrates that group farms can achieve comparable or superior productivity outcomes to individual family farms.

This article discusses the group farming interventions carried by the CybageAsha team (CSR department of Cybage Software Pvt Ltd.) in 14 villages across the taluka of Bhor and Velhe Taluka of Pune. The Paddy Cup is a group farming competition and support programme that encourages farmers to work together to grow high-quality paddy (rice) using modern and sustainable farming methods. The article examines the impact of CybageAsha's agricultural interventions on the livelihoods of the farmers, employing a field survey of 100 purposively selected farmers across 14 villages.

Key Components of Paddy Cup Support include: 1. Quality seeds and inputs (Taag seeds, urea briquettes for better nutrient management, organic fertilisers, pesticides for crop protection, and vermicompost training and equipment. 2. Technical guidance and monitoring; 3. Group farming model (farmers work in groups of 10-20 members, sharing labour during busy seasons, buying inputs together at wholesale prices, making collective decisions about farming practices, and marketing their produce together for better prices. 4. Competition and recognition: The Paddy Cup includes a competitive element where farmer groups are evaluated and the best-performing groups receive recognition and awards based on productivity improvement, adoption of sustainable practices, quality of produce, and level of group cooperation.

Survey results show that overall perception of participation in paddy cup has been positive. The farmers are better able to address labour scarcity, get better quality of produce, and are fully aware of Paddy Cup rules. The results also show that the training has helped in reducing problems that had been there before. Further, Paddy Cup has resulted in increased margins for farmers as it has led to increase in market value for their produce. The surveys reflect farmer's satisfaction and a will to continue to participate in the future.

Understanding Rural Transformation through the Lens of Rural Non-Farm Sector: A Gendered Perspective

Shuchi Benara Misra Assistant Professor, Symbiosis International University, Pune, Maharashtra

Partha Pratim Sahu Associate Professor, National Institute of Rural Development and Panchayati Raj, Hyderabad, Telangana

This paper provides evidence on rural non-farm employment (RNFE) from a gendered perspective, that is challenges women face, including fewer employment opportunities and limited access to skilled roles in the sector. Despite notable progress in education, training, and skilling initiatives over recent years, women's presence in the non-farm economy—particularly in manufacturing and services—remains limited in scale and concentrated in low-quality and subsistence forms of work. Secondary data (2017-18 to 2023-24) show that most rural women in manufacturing are concentrated as own-account workers, regular salaried employment remaining small and further declining after 2021. In both manufacturing and services, women's employment is largely defined by a lack of contracts and the near absence of social protection. The rising share of self-employment in services alongside the persistence of jobs without paid leave or social security indicates structural exclusion from the more secure, higher-return segment of labour market. Across both sectors, middle-aged women form the majority of rural non-farm workforce. Participation of younger women is consistently lower in services (23–25%) than in manufacturing (33–34%), indicating that younger women are relatively more present in manufacturing but still declining over time. Caste-wise distributions further reveal stratification within this gendered vulnerability. Other Backward Class (OBC) women dominate in both sectors; Scheduled Castes (SC) participation is stable but significant. Scheduled Tribe (ST) women are much more concentrated in manufacturing (12.5%) than in services (23.0%), while "Others" are more represented in services than in manufacturing.

Findings underscore that expansion of RNFE for women does not correspond to an improvement in the quality of work. Instead, the evidence points to a process of "informalisation within diversification", where structural shifts away from agriculture fail to provide stable, remunerative alternatives. This paper calls for more gender-inclusive policies, enhancing skill development, creating an enabling environment, to address the rural non-farm sector (RNFS) gender and social group gaps, and the inequality in access to non-farm employment.

Agrarian Distress in Bihar: A Structural Crisis?

Vini Prerna PhD Scholar, Dr. B. R. Ambedkar University Delhi, Delhi

While, agrarian crisis is a widely discussed issue in the Indian context and has garnered well deserved media and academic attention, its impact on various states varies significantly – states like Maharashtra or Punjab, have become synonymous with the agrarian crisis due

to the visibility rendered to them by media and academia on account of the tragic cases of farmers' suicide. These episodes draw considerable media and political attention making such crisis both visible and urgent.

Bihar, however tells a different story. The usual markers of agrarian crisis (such as low agricultural productivity, insecure tenancy, high outmigration) are no less severe in the state but the discourse regarding the agrarian crisis of Bihar is far less visible. The agrarian economy of Bihar and its lesser integration into the capitalistic market system has shielded the state from extremely severe and dramatic manifestations of agrarian crisis such as rising incidence of farmer suicide. However, agrarian crisis is very much pervasive through the rural landscape of Bihar. It is not episodic or sudden, but rather deep, chronic and structural.

With this context, the paper aims to examine the nature of Bihar's agrarian crisis, suggesting that it is best understood as a deep-rooted structural crisis rather than a cyclical or episodic one. It traces the roots of this structural agrarian crisis, arguing that the fragmented nature of smallholdings, the insecure tenancy system, and insufficient public investment in critical areas of the rural economy form the core interconnected factors that perpetuate and reinforce the crisis. The persistence of small and marginal holdings leans towards self-exploitation of peasant without any substantial jump in productivity. The nature of tenancy also remains precarious and dominated by inefficient arrangements. Low public investment in agriculture has made sure the situation remains stagnant. The rural non-farm sector and migration emerge as buffer mechanisms that attempt to stabilise rural livelihood confronting agrarian distress. However, both sectors run into their own limitations.

The paper adopts a mixed methods secondary data analysis approach to understand the structural dimensions of the agrarian crisis of Bihar. Agricultural Census (1995-96 to 2015-16) has been used to analyse long term changes in the landholding pattern; Union and state government budget documents have been examined to trace trends in public expenditure; several of National Sample Survey (NSS) and Periodic Labour Force Survey (PLFS) Employment-Unemployment Survey Rounds (1993-94 to 2023-24) are used to look into the structure of rural employment and workforce participation. In addition to 55th and 64th round of NSS Migration Surveys (1999-2000 and 2007-08) have been used to understand the scale of migration. In addition, the paper has also undertaken a comprehensive review of existing scholarly work and relevant reports to contextualise the quantitative indicators.

In comparison to states like Andhra Pradesh, Maharashtra, or Karnataka, where the agrarian crisis has drawn national attention because of the tragic phenomena of farmers suicide, the agrarian crisis of Bihar unfolds in a more invisible and insidious manner. Here the farmers are not dying sudden visible deaths but are being pushed into a slow and steady erosion of their livelihood and survival strategies.

Rehabilitation and Resettlement: Impact on Socio-Economic Fabric of Project Affected Communities

Shankar Kumar Jha PhD Scholar, Ranchi University, Ranchi, Jharkhand, and General Manager (Human Resource), Land & Revenue Department, Central Coalfields Limited (CCL)

This paper examines how Rehabilitation and Resettlement (R&R) linked to the Rajmahal coal project in Jharkhand has reshaped the social fabric of project affected communities. It focuses on how displacement and subsequent resettlement have impacted everyday relationships, community life, cultural practices and local power structures. The central question is whether R&R in Rajmahal has only shifted people physically or actually supported a dignified and cohesive community life after displacement. The study uses a qualitative case study approach, centered on villages and resettlement colonies affected by the Rajmahal project. It relies on interviews and group discussions with displaced families, traditional leaders, women, youth and local representatives, along with observations of daily life in resettled areas. Policy documents, company guidelines and government records related to land acquisition and R&R in Rajmahal are also examined. This combination helps to capture both the official promises of R&R and the real experiences of people living with its outcomes. The study also looks closely at how key laws and policies—especially the Coal India Limited's R&R Policy, 2012—actually work on the ground for project affected families and impacted on socio economic fabric of project affected communities. The analysis looks at three main dimensions of the social fabric. First, it explores how kinship ties, neighborhood relations and mutual support systems were affected by displacement and then gradually rebuilt in the new resettlement sites. Second, it studies changes in cultural and communal life, including festivals, rituals, community gatherings and the use of shared spaces such as community halls, temples and playgrounds. Third, it examines shifts in local power relations, including the role of Gram Sabha, project-level committees and informal leaders in negotiating entitlements, resolving conflicts and representing community interests. Preliminary findings suggest a mixed picture. On one hand, planned resettlement colonies, improved housing, roads, schools and basic services have created new opportunities for interaction, education and access to state institutions. In some areas, R&R-linked employment and compensation have strengthened certain households, enabled investments in children's education and given rise to new youth groups and community organizations. On the other hand, the fragmentation of old settlements, unequal access to jobs and benefits, and the marginalization of landless labourers and women have produced new tensions and feelings of injustice. Traditional forms of authority and collective decision-making have been challenged, sometimes leading to internal divisions within the community. The paper argues that the impact of R&R on the social fabric in Rajmahal cannot be seen only in economic or infrastructural terms. It must be understood in terms of belonging, trust, identity and voice. By highlighting both the gains and the fractures produced by resettlement, the study underlines that R&R policies need to go beyond compensation and physical relocation. They must consciously protect and rebuild social networks, cultural continuity and inclusive local

institutions if project affected communities are to experience displacement not as social loss, but as a pathway to a more secure and cohesive collective life.

Changing Workforce and Migration of Labour from Rural to Urban Areas in Telangana: A Study from the Perspective of Social Protection

Prabhakar Reddy Tada Senior Advisor, Research and Training, Dr MCR HRD Institute of Telangana, Hyderabad, Telangana

The process of proletarianization in rural and urban areas has been triggered by the movement of capital from one country to another, primarily into developing economies in the wake of globalisation. Consequently, labour is hired at a cheaper rate to work in the informal sector, often in the absence of social protection. As a result, productivity and wages are much lower than in the formal sector, while governments remain mute spectators, ignoring their role and responsibility.

The labour force participation rates for females is declining while for males they are rising creating a gender gap in employment and wages. Employment generation by the governments is less than expectation while privatisation has changed the structure of industry with a focus on capital flows into profit making avenues. As a result, families from rural areas are migrating to urban centres with a view to earn better wages which is leading to casualisation of labour and rise in poverty that has a bearing on the labour markets. Further, the structural and systemic problems pertaining to decent work and livelihood are not resolved by the governments; hence, labour market flexibility is needed but with protection.

Against the background, we examined changing workforce pattern in terms of their casualisation, contractualisation, and informalisation in Telangana, and its implications and impact on the labour markets. We have suggested corrective steps to be taken immediately to introduce 'flexible labour laws' that would be pro-labour in approach. Moreover, reducing barriers to formal employment, simplifying all labour laws, introducing state level reforms, improving labour market data, and providing social protection to the poor are critical in addressing the issues of unorganised labour and their distress migration to urban centres in the state.

TECHNICAL SESSION **3.5**

Extreme Poverty or Destitution? Foregrounding Public Policy Conundrums from the Kerala Experience

Sumangala Damodaran Professor, International Development Economics Associates (IDEAs), Delhi

On November 1, 2025, Pinarayi Vijayan, the Chief Minister of Kerala declared that the state had eradicated extreme poverty, making it the first state in India to do so. As a culmination of the Extreme Poverty Eradication Programme (EPEP) that was launched in May 2021, this involved the identification of 103,099 individuals in 64006 households who were declared as 'athidaridrar', translated from Malayalam as 'extremely poor', and the adoption of policies to address their situation. This announcement has come two years after the Niti Aayog's progress review report announced in 2023 that Kerala had the lowest poverty rate in India (0.55%, compared to the national average of 14.95%), according to its Multidimensional Poverty Index (MDPI). While the Nov 1 announcement has met with appreciation and is being hailed as a landmark in the handling of poverty in a developing country, it has also been subjected to critiques directed at the methodology of identification, definitional incorrectness in the processes adopted and whether it is at all an advance for a genuine poverty eradication agenda. What does this announcement mean, in terms of who the 'extremely poor' or 'athidaridrar' are, how they have been identified and what measures have been undertaken to lift them out of poverty? To what extent can the Kerala experience with handling poverty be considered an alternative to dominant approaches, or, as some critics are arguing, a merely managerial and largely obfuscatory exercise? How can the Kerala case be considered in the context of the landscape of poverty and destitution eradication policies in developing countries? How can questions of employment, livelihood security and social protection be brought into the discussion with interventions such as this, or do they get bypassed in the declaration of success in addressing poverty? This paper assesses the Kerala experience in terms of the above questions. It provides a detailed look at the poverty eradication programmes in Kerala, with a specific focus on the Extreme Poverty Eradication Programme (EPEP) and its methods of identifying the extremely poor in the state. It then contextualises this in terms of the landscape of programmes in other countries such as Brazil and Colombia which have undertaken what they claim to be innovative poverty eradication policies that also foreground employment and livelihood creation and protection in addition to alleviation.

Households' Choices and their Drivers to Rural Non-Farm Livelihood Diversification in West Bengal, India

Manoranjan Ghosh Assistant Professor, Symbiosis International University, Pune, Maharashtra

There are inadequate empirical studies on non-farm livelihood choices of rural households in the state of West Bengal, India. This study aims to explore the determinants that effect the choice of households to engage in non-farm economic activities. The present study found that non-farm livelihood diversification factors are more heterogeneous and mainly depend on households' strategic decisions. A household's choice of non-farm livelihood activity is determined by binary aspects opportunity-driven versus distress-driven, but it is a complex transformation phenomenon. It has been noticed that within the non-farm livelihoods, share of wage labour (38.3%) is higher, followed by non-farm businesses (19.8%), service providers (18.0%), and salaried jobs (3.4%). The location and distance to the town from the households, food insecurity, and agricultural land size are more influential and statistically significant factors in choosing non-farm livelihood practices. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has negatively impacted rural non-farm livelihood activities. There is an 18.0% and 39.0% probability of reducing non-farm business and services compared to the increasing MGNREGA work opportunities. Moreover, the likelihood of non-farm business choices have increased by 56.0% due to rainfall and temperature-change-induced disasters.

The participants of the Focus Group Discussion (FGD) have vividly indicated that non-farm livelihood practices have increased in the last 7 to 10 years. The participants also mentioned that the educated youth do not want to do agricultural work and that is why, self-cultivated farm practices have been reducing. The younger generation has been involved in small businesses, service-related work, and daily salaried jobs (some stone cutting factories have emerged in different parts of the study area and in surrounding urban areas such as Dhupguri, Siliguri, and Jaigoan). However, male and upper-class domination still exists in the non-farm livelihood diversification in these villages. The men of the households with small agricultural lands who chose non-farm livelihood chose non-farm work, while it was seen that the women were voluntarily involved in agricultural practices. Therefore, a trend of feminisation of agriculture can also be noticed.

Can Livelihood and Crop Diversification be Effective against Poverty in Rural Afghanistan?

Reza Ehsan, PhD Scholar, South Asian University, New Delhi

In a rural agrarian economy, the diversification of livelihood options and crop production can be a useful strategy to tackle household poverty. This paper empirically verifies the impact of

crop and livelihood diversification on the headcount and multidimensional poverty in rural Afghanistan. In doing so, the paper makes an important contribution since the literature on the issue under consideration is scanty in the context of Afghanistan. The result of the econometric analysis shows that households with a higher extent of livelihood and crop diversification are likely to be less poor in terms of headcount and multidimensional poverty. In other words, the households with a higher extent of livelihood and crop diversification are less likely to be poor – both in terms of consumption poverty and multidimensional poverty. This result is robust to the choice of the functional forms and the forms of the dependent variable in the regression analysis. Other demographic and socioeconomic variables that impact household poverty include, namely, household size; age, sex, marital status, and education of the head of the household; wealth; ownership of livestock; land ownership; access to credit; drought; natural disaster; remittance; insecurity; landscape; distance to food market; and daily wage of skilled labour has a significant influence on headcount poverty, and the 'non-food-to-total consumption expenditure' ratio. This result is robust even when we choose different functional forms and variants of the dependent variable in the regression analysis. The paper also identifies certain other socioeconomic and demographic variables that affect the incidence of poverty in rural Afghanistan. The Afghanistan Living Conditions Survey (ALCS) of 2016/17 has been used for this study. In light of the results of our analysis, we suggest that measures to promote livelihood and crop diversification among the rural population of Afghanistan should be taken.

Is Gender Parity Costly? Evidence from Rural Local Body Elections

Vijayshree Jayaraman Research Associate, Centre for Advanced Financial Research, Mumbai, Maharashtra

This paper examines the causal effect of electing a female Gram Panchayat (GP) president on public employment provision under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Using a five-year panel of 9,622 GPs in Tamil Nadu, we employ an instrumental variable strategy exploiting the gender reservation of GP president positions to address endogeneity concerns.

We find that GPs led by women presidents experience a 2.6 percentage point decline in total person-days generated per year compared to those led by men, amounting to approximately 743 fewer person-days. The decline is disproportionately borne by women workers, who constitute around 86% of total MGNREGS participants in Tamil Nadu. The negative effect persists after controlling for GP-level characteristics and president-specific attributes such as education, age, prior political experience, and caste identity, suggesting that observable differences do not explain the gap. Instead, the results point towards higher economic and social costs faced by women presidents as the underlying mechanisms. Economic costs arise from the low honorarium, out-of-pocket expenses, and restrictions on

alternative income sources, which are particularly binding in competitive electoral settings. Social costs include gender and caste-based discrimination, diminished authority, and male backlash, with effects amplified for women from Scheduled Caste (SC) and Scheduled Tribe (ST) backgrounds, indicating a double penalty.

Heterogeneity analysis shows that the magnitude of the negative effect is larger in GPs with high electoral competition, low vote-share concentration, and in those reserved for SCs/STs. Robustness checks, including placebo assignments and leave-one-block-out tests, confirm that the results are not driven by outliers or random variation.

These findings highlight that while gender quotas increase women's descriptive representation, they may fail to ensure equal governance outcomes when deeper institutional barriers persist. Without addressing these constraints, quotas risk producing unintended welfare losses, particularly for marginalised groups. The results underscore the need for complementary measures such as fair compensation, institutional support, and interventions to reduce discrimination, to enable elected women leaders to govern as effectively as their male counterparts.

Nexus of Household Cooking Energy Transition and Female Labour Force Participation in Rural India: The Mediating Role of Liquified Petroleum Gas Subsidy

Meghna Meghna Sr. Fellow, Indian Institute of Information Technology, Indore, Madhya Pradesh
Kalandi Charan Pradhan Assistant Professor, Indian Institute of Technology, Indore, MP

Clean cooking initiatives in the Global South are often justified on health or environmental grounds; however, their labour market outcomes remain poorly understood. This study utilises the nationally representative India Human Development Survey (IHDS) 2011–12 round to systematically assess the extent to which government subsidies influence rural households' adoption of liquefied petroleum gas (LPG) for cooking purposes and the subsequent impact of adoption on female labour force participation (FLFP).

Employing a Conditional Mixed Process (CMP) model, the analysis addresses potential endogeneity in rural households' fuel choices and women's employment decisions, thereby enabling robust causal inference. The results reveal that each additional subsidy increases the probability of LPG cylinder adoption by approximately 40 percentage points, while a â,¹1 increase in refill price reduces this probability by 0.02 points. Furthermore, the distance to the nearest urban refill centres and limited household resources significantly constrain sustained adoption, whereas the educational attainment of the household head beyond primary schooling substantially enhances it. Importantly, after accounting for selection bias, persistent LPG usage increases the probability of a rural woman participating in economic

activities by roughly 4 percentage points. This finding substantiates the time reallocation channel, where reduced fuel-gathering responsibilities translate into greater engagement in market employment.

By integrating the domains of energy access and gender empowerment within a unified empirical framework, this paper makes a novel contribution to the clean cooking literature and provides the first nationally representative evidence linking LPG adoption to labour market outcomes in rural India. The findings highlight that expanding clean fuel access is not solely an environmental or health imperative but also a pathway to enhancing women's economic agency. Policy recommendations underscore the potential of combining price-indexed refill subsidies with decentralised distribution networks and targeted outreach via self-help groups (SHGs) to simultaneously accelerate clean fuel adoption and expand livelihood opportunities for women, especially in economically lagging and infrastructure-deficient regions.

What Drives the Manufacturing Employment in Bangladesh?

Md. Tuhin Ahmed Lecturer, Mawlana Bhashani Science and Technology University, Dhaka, Bangladesh

Dipa Das Research Associate, South Asian Network on Economic Modeling (SANEM), Dhaka, Bangladesh

This study investigates the demographic, household, human capital, and geographic determinants of employment in the manufacturing sector in Bangladesh, using nationally representative and cross-sectional data from the Quarterly Labour Force Survey (QLFS) 2022. A multinomial logit model is employed to analyse the probability of individuals being employed in manufacturing, non-manufacturing, and service sectors relative to agriculture. The results demonstrate significant variations in the likelihood of employment across different demographic groups.

The findings reveal that age plays a pivotal role in determining employment outcomes, with the odds of employment in manufacturing significantly declining after the age of 45. However, individuals in the prime working age group (25–44 years) have substantially higher chances of being employed in the manufacturing sector. Gender differences are also pronounced, as the manufacturing industry remains predominantly male-dominated, leading to much lower employment rates for women compared to men. This gender disparity underscores the challenges women face in accessing manufacturing jobs. Marital status further influences employment outcomes, with widowed, separated, and divorced individuals being more likely to work in manufacturing. This may be driven by economic necessity, as these individuals may have fewer financial resources or social support. Education and vocational training significantly increase the likelihood of securing employment in manufacturing, highlighting the importance of human capital development in facilitating access to industrial employment. Household characteristics such as the presence of other manufacturing workers, household size, number

of young children, and land ownership are significant determinants. Individuals from landless or land-poor households, those residing in rented accommodations, and urban dwellers are more inclined to seek employment in the manufacturing sector. Finally, geographic factors indicate that residents of the eastern regions of Bangladesh are slightly more likely to engage in manufacturing employment compared to those in the western regions.

These findings suggest that spatial inequalities continue to shape access to industrial opportunities. The findings highlight the importance of demographic dynamics, household constraints, education, and spatial inequalities in shaping manufacturing employment patterns in Bangladesh, offering insights for policymakers aiming to foster inclusive industrial growth.

Employment in Forestry and Logging of India: A Disaggregated Analysis using Unit-Level Data of Periodic Labour Force Survey

Hanjabam Isworchandra Sharma Associate Professor, Manipur University, Imphal, Manipur

Lynda Thoudam Research Associate, Manipur University, Imphal, Manipur

The paper examines the recent trends of employment in forestry and logging in India using the annual Periodic Labour Force Survey (PLFS). The study finds a consistent growth of forest employment in the study period, which is more pronounced in COVID-19 years and for female workers. Among the sub-groups of forestry and logging, logging activity is generating half of the total workers in forestry and logging, with female workers entering the gathering of firewood subgroup in large numbers, reflecting a structural retrogression in forest employment. Silviculture activities are the next component that generates the second highest, followed by a gathering of non-wood forest products, with the gathering of tendu leaves (a leaf used to make a local cigarette called *bidi*) having the highest percentage. Interstate and inter-regional variation is experienced in forestry employment, with tribal dominated states and the Himalayan states having a comparatively high percentage of forest employment as a percentage of the total agricultural employment, and at the same time, a negative growth rate of forest employment in tribal dominated regions is also witnessed. Looking at the employment type, there is high informality in forest employment as reflected by a high percentage of self-employed and casual labour in forest employment, and the incidence has been higher among female workers. Employment elasticity of the forestry sector is yet to show its full potential compared to other sectors of the economy. Strong economic fundamentals such as social sector investment and rural literacy are positively affecting forest employment. Improving the market access of forest products, especially non-timber forest products (NTFPs), and fostering strong forest-industry linkages, along with enhancing social security measures for informal workers in forestry employment, will help realise the full potential of the forestry sector in generating sustainable and productive employment.

TECHNICAL SESSION 3.6

Do Workfare Programmes Improve Minimum Wage Compliance for Rural Informal Workers? Evidence from MGNREGA in India

Arindam Das Joint Director, Foundation for Agrarian Studies, Bengaluru, Karnataka

The minimum wage serves as a policy instrument to reduce wage inequality and narrow the gender wage gap, particularly for workers in the lowest decile of the wage distribution. However, its effectiveness in India remains widely debated due to persistent non-compliance in the labour market. Weak enforcement mechanisms and the complexity of the wage system contribute significantly to this non-compliance. Despite these challenges, studies have documented improvements in compliance rates between 2004–05 and 2011–12, particularly in rural areas. This period coincides with the implementation of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), the world's largest employment guarantee programme. While several studies have examined MGNREGA's impact on rural employment, wages, and welfare, its role in improving minimum wage compliance remains unexplored.

This study investigates the impact of MGNREGA on compliance with minimum wage regulations for informal sector workers in rural India. Specifically, it examines whether MGNREGA contributed to the observed improvements in compliance rates. Using a matching procedure combined with a difference-in-differences (DiD) estimation approach, the study analyses the short- and long-term effects of MGNREGA on rural wages, wage distribution, and employment between 1999-2000 and 2018–19.

The findings indicate that MGNREGA significantly improved minimum wage compliance and increased reservation wages. However, the programme's effects vary across states, regions, and genders, highlighting its heterogeneous impact. At its inception, MGNREGA provided a legal guarantee of 100 days of public-sector employment per year at the minimum wage for rural households. However, policy changes since 2011, such as indexing MGNREGA wages to the Consumer Price Index (CPI), have weakened its distributional effects and diminished its impact in recent years.

In developing countries with weak enforcement mechanisms, employment guarantee schemes such as MGNREGA not only provide employment opportunities in underserved populations but also serve as effective tools for enforcing minimum wage regulations for unskilled workers.

Self-Employment Dynamics in Rural India: Analysis using Periodic Labour Force Survey and Annual Survey of Unincorporated Sector Enterprises

Vaibhavi Subhash Pingale PhD Scholar, Gokhale Institute of Politics and Economics, Pune, Maharashtra
Anurag Asawa Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra
Santoshi Rajguru Research Associate, Gokhale Institute of Politics and Economics, Pune, Maharashtra

This paper examines rural self-employment and earnings disparities in India using microdata from the Periodic Labour Force Survey (PLFS) and the Annual Survey of Unincorporated Sector Enterprises (ASUSE) for the period 2021–22 to 2023–24, released by the Government of India. By employing the Oaxaca–Blinder decomposition methodology, the study quantifies the rural–urban earnings gap and decomposes it into components attributable to endowments, coefficients, and interaction.

The analysis reveals that, while rural self-employed workers possess comparable human capital endowments in some cases, structural inequalities result in lower returns to these endowments, contributing significantly to earnings disparities. Sectoral and ownership-based decomposition further identifies the contributions of manufacturing, wholesale trade, and private enterprises to the observed differences in income and enterprise performance. Findings indicate that returns to characteristics and sectoral dynamics play a critical role in shaping income outcomes, highlighting the importance of both economic structure and policy interventions in promoting rural self-employment.

Based on decomposition results and sectoral analysis, targeted policy recommendations are proposed, including enhanced financial inclusion, skill development programmes, promotion of high-value sectors, infrastructure support, and strengthening institutional frameworks for rural enterprises. By integrating rigorous econometric analysis with microdata evidence, the study contributes to the literature on rural livelihoods, structural inequalities, and policy design, offering actionable insights for government, policymakers, and development practitioners seeking to foster equitable rural economic growth, enhance enterprise sustainability, and reduce persistent rural–urban income disparities across diverse regions of India.

This study holds significant relevance in the context of India's evolving rural economy, where self-employment serves as a primary source of livelihood for a substantial portion of the population. By systematically analysing rural–urban earnings disparities and determinants of self-employment using microdata from the PLFS and ASUSE, the study provides a nuanced understanding of the structural and sectoral factors influencing income outcomes, suggests measures for improvement of self-employed.

Rural Transformation and Workforce Dynamics in India

Surjya Narayan Tripathy Former Professor of Economics, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Rural transformation in India represents a complex, uneven process shaped by structural shifts from agriculture to diversified non-farm activities, interacting with evolving policies, digital technologies, and environmental challenges, which together reconfigure livelihoods and labour markets. Theoretical models such as Lewis's dual-sector, Fei–Ranis, and Rostow's growth stages provide broad interpretive frames. However, India's specific trajectory emphasises the necessity of integrated, context-sensitive interventions aligning economic, social, and environmental priorities. Over the past decade, digital expansion-fostered through public–private connectivity initiatives has penetrated rural India, enabling new employment opportunities in platform work, e-commerce, and agri-advisory services. However, persistent digital divides by gender, income, and region constrain equitable gains.

Periodic Labour Force Survey (PLFS) data reveal increasing rural labour force participation, driven partly by mixed livelihood strategies that integrate self-employment, agriculture, and part-time digital gigs, which function as flexible income supplements rather than substitutes for traditional work. Simultaneously, environmental vulnerabilities such as land degradation, erratic rainfall, and heat stress reduce agricultural labour absorption, prompting shifts towards drought-tolerant crops and seasonal migration or reliance on public employment schemes such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), which also create productive assets.

Public investment in irrigation, rural roads, and market linkages has stabilised labour demand, facilitated crop diversification into high-value produce, and expanded non-farm enterprises in peri-urban networks, reinforcing local employment ecosystems. The interplay of these forces demonstrates that rural transformation requires simultaneous progress in infrastructure reliability, digital capability, environmental resilience, and inclusive skill development. Rural–urban linkages are deepening through remittances, connectivity, and supply chains, creating hybrid spaces where livelihoods straddle both spheres, necessitating spatially coherent policy approaches. Social capital, community institutions, and collective action remain critical in filling gaps left by markets and state mechanisms, while regionally sensitive planning is vital to reduce spatial disparities. The post-pandemic recovery presents an opportunity to embed resilience by investing in health, local entrepreneurship, decentralised energy, and climate-adaptive public works.

Sustainable rural transformation in India thus rests on agricultural modernisation, non-farm diversification, digital inclusion, gender-sensitive policies, and environmental sustainability as integrated pillars. Emerging theoretical frameworks emphasise inclusivity, equity, and ecological responsibility as essential to long-term rural development. Global experiences highlight that successful transitions combine public investment with market reforms to ensure

equitable growth, offering lessons for India's policy direction. Ultimately, the rural workforce lies at the heart of transformation, with its evolving skills, occupations, and mobility both shaping and reflecting India's ongoing structural reconfiguration. Without targeted measures addressing gendered access constraints, ecological stressors and rural–urban digital gaps, the transition risks deepening existing inequalities, undermining the sustainability of rural livelihoods. In this context, region-specific policies that integrate physical infrastructure, digital inclusion, and ecological stewardship can nurture a resilient, diversified, and equitable rural economy, thereby ensuring sustained growth and enable long-term structural transformation.

Empowering or Distress-driven: The Recent Rise in Female Self-employment in Rural India

Avanindra Nath Thakur Professor, OP Jindal Global University, Sonipat, Haryana

Priyanshi Chaudhary PhD Scholar, OP Jindal Global University, Sonipat, Haryana

The post-COVID period witnessed a significant jump in the female workforce, particularly in rural India. Much of the labour absorption for females in rural India happened in self-employment activities. While such a rise is often termed as the expansion of employment opportunities for rural females in the official discourse, it cannot unambiguously be taken as an improvement in the livelihood conditions of the workforce, particularly in the Indian context, where a large part of diversification towards self-employment remained a strategy to cope with the prevailing or rising distress in the job market. Very often, limited expansion in wage employment, clubbed with the agrarian distress, also leads to rising female participation in self-employment activities. In this context, the paper will track the change in the trends and patterns of earning distribution of self-employed women in rural India to identify the extent to which such a shift has been a part of rural transformation with upward income mobility or simply a sign of distress diversification.

The paper, with the help of unit-level Periodic Labour Force Survey (PLFS) data (from 2017 to 2024), explores the trends and patterns of average earnings of self-employed female workers. The paper also identifies the industries/sectors (based on NIC codes) which absorbed most of the increased female employment during the recent period and attempts to understand to what extent the rise in the selected self-employment activities in those sectors was guided by the rising employment opportunities or earnings benefits. The paper identifies major activities within the self-employment category at 2-digit and 5-digit levels, which absorbed maximum incremental female employment, and explores their earning dynamics to understand the same. Various statistical tests (such as Kruskal-Wallis and Wilcoxon rank-sum test, and Common Language Effect Size [CLES]) are used to understand the shift and pattern of the income distribution of self-employed rural women. The paper also delves into how the income of different fractile groups of workers changed over time.

Social Identity and Structural Transformation in Rural India

Neha Bailwal Assistant Professor, FLAME University, Pune, Maharashtra

B. Satheesha Sr. Research Associate, Gokhale Institute of Politics and Economics, Pune, Maharashtra

In this paper, we explore the relationship between social identity and structural transformation in rural India. Using data from two rounds of the Indian Human Development Survey (IHDS) conducted in 2004-05 and 2011-12, we find that members of disadvantaged communities, specifically Scheduled Castes (SC) and Scheduled Tribes (ST), were more likely to move away from agriculture to the non-agricultural sector compared to other social groups. However, this shift from agriculture varies significantly across different village types. In villages dominated by a single caste, SC individuals are less likely to move from farm to non-farm sector compared to villages where no single caste dominates. Our findings do not support the evidence of poor implementation of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), improved access to infrastructure, role of tenancy, in explaining the observed variations in labour movement between these village types. Instead, we find that a limited social network among marginalised castes, along with higher wages and more employment opportunities in villages dominated by a single caste, compared to those not dominated by any particular caste, are key factors in explaining our main results.

Women, Self-Help Groups, and Mechanisation: Understanding the Role of Custom Hiring Centres in Rural Agriculture

Itishree Pattnaik Assistant Professor, Gujarat Institute of Development Research, Ahmedabad, Gujarat

Farm mechanisation and crop productivity are directly linked: it increases crop output as well as farm income, and leads to decline in drudgery, lowering production costs over the long term, and reducing post-harvest losses. However, high-cost farm machinery are beyond the reach of the small farmers. Hiring machinery services has helped in improving the efficiency in pre-harvest, harvest, and post-harvest operations. Further, it helps in increasing the yield, output, and income as well as speeds up the marketing operations.

Custom hiring centres (CHCs), supported by the agricultural department, have been an important instrument for helping small farmers obtain agricultural machinery at an affordable price. Hiring the machinery would help in reducing the time spent; this would enhance the farmers' opportunity to work outside agriculture in other non-farm activities.

During 1991-2000, custom hiring of machinery and implements became popular in a big way. The CHCs played a vital role in introducing high technology agriculture machineries to even small farmers with the objectives to: boost crop production, improve quality, timeliness, and efficiency of agricultural operation. Rural Development Department, Government of Gujarat,

channelised the CHC through women self-help groups (SHGs) with an aim to empower women along with taking care of the farmer's need to reduce the cost. In this context, the present study aims to examine the importance of this programme in promoting women empowerment as well as helping small farmers.

This study was conducted by interviewing both the service providers (women SHGs) and the beneficiaries (farmers). A total of 138 CHCs have been established in Gujarat by the Rural Development Department. out of which 81 CHCs were studied. Out of the selected 81 SHG-led CHCs, 67.9% are operational while the remaining (32.0%) are not operational. The significant number of CHCs being functional is an indication of successful initiation by the Rural Development Department. However, region level variation exists with respect to the functioning and management of the CHCs.

A comparison of SHG-led CHCs and farmer-led CHCs has also been conducted to examine the difference in the spread, management, and functioning of the CHCs. A district-wise analysis shows that farmer-owned CHCs have more coverage, with the majority offering implements rental services beyond their home village. However, SHG-led CHCs show a more localised operation, with only a few districts—such as Jamnagar, Gir, Somnath, and Junagadh—showing renting of implements out of the village. This suggests a need for capacity-building and market-linking efforts for SHG-led CHCs, particularly in districts such as Bharuch, Dahod, and Rajkot, where external rental activity is non-existent or minimal. It was also found that the farmer-led CHCs have better coverage compared to the SHG-led CHCs. This may be on account of better networking by the farmer-led CHC, which are mainly led by male farmers, compared to women led CHCs.

Around 84.0% of farmer-led CHCs rent implements to farmers outside their village, while only 28.4% of SHG-led CHCs do the same. This contrast shows that farmer-led CHCs tend to operate in a more commercially expansive manner, possibly with broader market networks or greater autonomy in decision-making. The SHG-led CHCs need to prioritise local community needs, potentially due to their collective decision frameworks, access limitations, or operational focus.

We tried to analyse how income earned from renting agricultural implements through SHGs is managed. It was evident from our analysis that mainly there is gendered control over CHC income. The responses are categorised as follows: 1) Husband of the SHG Head or other named members – indicates male-dominated control. 2) Leader of SHG – indicates centralised control by the female leader. 3) SHG Members – indicates democratic and participatory control by women.

Nearly half (49.3%) of the CHCs have their earnings managed primarily by the husbands of SHG leaders, which indicates the persistence of patriarchal norms, where despite the institutional structure of SHGs being women-centric, men—often through familial ties—continue to control key financial decisions. In districts such as Gandhinagar, Navsari, Rajkot, Kutch, Surendranagar, Mehsana, and Narmada, the proportion of such male-controlled

management is especially high, ranging between 72.7% and 100.0%. This undermines the transformative potential of SHGs and limits women's financial agency and decision-making power. A quarter (25.1%) of SHGs have collective management of income, which is the ideal scenario reflecting empowerment, ownership, and accountability among women. This reflects the most empowering and inclusive form of CHC governance. It signifies not only the presence of women's agency but also the operationalisation of democratic principles in everyday functioning.

While some districts reflect good practices, there is significant room for improvement to raise the collective empowerment of women led SHGs across the state. The major issues that are evident are: i) lack of information and awareness among the SHG members, ii) lack of decision making — autonomy by the leader of the SHG, iii) benefit are concentrated only in and around Ahmedabad and Gandhinagar region, basically the developed regions, and iv) women beneficiaries are recorded in the list but have actually not received the benefits — there is gap between official records and actual beneficiaries.

Unequal Structural Transformation, Employment Shifts, and Development Outcomes in Indian States: Examining the Mediating Role of Government Expenditure

Sudhanshu Kumar Associate Professor, Bihar Institute of Public Finance and Policy, Patna

This study examines changes in economic structure across Indian states and their impact on economic growth and development outcomes during 1990-91 to 2022-23. The absence of a consistent pattern in the relative significance of economic sectors at the subnational level underscores the importance of evaluating the roles of institutional frameworks and state-level government expenditure in social sectors and infrastructure. Analysis at the state level shows that states with higher government expenditure and stronger initial human development indicators have achieved greater progress across multiple development measures. Furthermore, it finds that shifts in economic structure are linked to improvements in human development indicators only when accompanied by increased government expenditure in the social sector. Conversely, states with lower social sector investment experience weaker or more unequal outcomes. The findings indicate that policies prioritising the social sector can enhance the welfare benefits of structural transformation without mandating specific sectoral growth trajectories. The observed heterogeneity across states further suggests that policy effectiveness is contingent on initial conditions, implying that states with lower levels of human development require sustained investment in foundational capabilities to fully benefit from structural transformation.

Gender-Wage Gap in the Agriculture Sector in India: Evidence from Periodic Labour Force Survey Data

Ranjana Roy Sr. Fellow, ICRIER, New Delhi

Sabarni Chowdhury Assistant Professor, Galgotias University, Greater Noida, Uttar Pradesh

This paper inspects the persistence of the gender wage gap in India's agricultural sector, drawing on data from various rounds of the Periodic Labour Force Survey (PLFS) conducted between 2017–18 and 2023–24. Despite an overall increase in women's participation in agricultural employment during this period—from 36% to 45%—the upsurge has mostly been concentrated in casual labour and unpaid family work, rather than in more secure or compensable forms of employment. Real wage growth for women has persisted to be stagnant, with female agricultural workers registering only an insignificant increase in purchasing power. While the female-to-male wage ratio has enhanced slightly, rising from 74% to 80%, women continue to earn considerably less than men, even when employed in comparable agricultural tasks. The econometric analysis, employing pooled cross-sectional regressions and interaction models, confirms the persistence of a substantial gender wage gap after controlling for education, caste, region, and employment type. Further, the Blinder–Oaxaca decomposition exhibits that while part of the wage differential is attributable to variances in endowments such as education or employment in higher-paying subsectors, a much bigger share remains unexplained. This unexplained component reflects inherent discrimination and structural blocks rooted within rural labour markets, including occupational exclusion, unequal bargaining capacity, and socio-cultural standards that restrict women's economic opportunities.

Regional and sectoral disparities exhibit additional nuance. In southern states where female participation is higher, wage gaps remain significant due to occupational segmentation into low-paying jobs. Contrarily, states with nominal wage gaps, such as Uttar Pradesh and Jharkhand, show very low female contribution, signifying exclusion rather than equity. Sectorally, women are concentrated in low-skill and labour-intensive tasks such as weeding, transplanting, and harvesting, while men control mechanised and market-facing roles.

Overall, the findings underline that decline in the gender wage gap needs more than equal pay mandates. Policy interventions must address structural inequalities in access to land, credit, training, and technology, while dismantling rooted social norms that undervalue female labour and constraint their economic agency.

TECHNICAL SESSION 3.7

Revival of Gond Art: Self-Help Groups as a Catalyst for Feminist Reawakening

Niharika Singh Assistant Professor, Symbiosis International University, Symbiosis School of Economics, Pune, Maharashtra

Sudipa Majumdar Professor, Integrated Research and Action for Development (IRADe), New Delhi

Chandani Tiwari Assistant Professor, Symbiosis International University, Symbiosis School of Economics, Pune, Maharashtra

This study examines how self-help groups (SHGs) in the Gondia district of Maharashtra, India, are helping to revive Gond art as a sustainable source of income for women. The rich cultural legacy of Gondia is well-known, as is the existence of the Gond tribe, whose traditional art form, Gond art, is distinguished by its elaborate patterns and vivid colours. With an emphasis on their initiatives to revitalise Gond art and support sustainable livelihoods for women, the study emphasises the importance of SHGs in Gondia.

The study explores the historical background of Gond art and looks at how SHGs have helped bring it back to life, empowering women on the social and economic fronts. The life-changing effects of SHGs on women are demonstrated through in-depth case study, which highlight the transition to empowerment and self-sufficiency. The study also examines training initiatives, government policies, and interventions designed to support sustainable Gond art practices applying the 'theory of change' (TOC).

The results highlight the crucial role played by SHGs in maintaining the tribal cultural heritage along with promoting sustainable livelihoods. There are important recommendations for reinforcing SHGs and promoting Gond art practice both within and outside of Gondia, and they add to the larger conversation on sustainable development. The SHGs have rejuvenated this traditional tribal art form by becoming financially independent and transforming the declining tradition into a profitable enterprise. The SHG members of Gondia have ensured that the art forms continue to be relevant in modern times, along with the larger goals of cultural preservation and economic growth. Incorporating SHGs into the cultural framework has revived Gond art, making it available and visible, while preserving culture and building

communities. The success stories of women artisans highlight the power of SHGs in changing lives and communities while also protecting cultural heritage thereby empowering women in Gondia.

Corporatising Domesticity? Reflection on the Work-from-Home Job Schedule

Arindam Roy Professor, The University of Burdwan, Burdwan, West Bengal

Domesticity is a patriarchal construction which incarcerates women in their respective gendered roles and domestic responsibilities. The paper intends to problematise the supposed relationship between patriarchy and capitalism in the recent 'work-from-home' job schedule, popularised in the wake of the COVID-19 pandemic by all the leading corporate houses across the globe. There is no denying that the entire feminist epistemology has been grappling with the task of unravelling the said relationship. Unlike the popular construction of the household as the site of intimate relationships based on love, warmth and empathy, the feminist epistemology has laid bare the insidious 'cult of domesticity' built upon the household. The sociological and anthropological literature is full of studies on domesticity. The cult of domesticity believes in worshipping gendered stereotypes that are manifested in the shared attributes of ritual, sacrifices, control, and caring. Historically, domesticity encapsulates the male/hunter/female-gatherer dichotomy manifested in their gendered roles. Hence, the cult of domesticity, which demands women to be submissive, domesticated, and pure, reinforces traditional gendered roles. This culture of domesticity is so pervasive and entrenched in our society and polity that even the corporate sector comes within its fold. The recent work-from-home schedule or remote work schedule, no matter how it was celebrated as the 'freedom-from-workplace' to 'work-life balance', smacks of the typical capitalist proclivity of corporatising of domesticity, as such a move that facilitates further growth of capital. Though there is no denying that corporate houses have been pretty liberal and considerate to their remote workers in facilitating their work-at-home set-up with financial packages, break-time, and others, it can hardly do anything with the intra-household dynamics, which is essentially patriarchal in nature. Having said that, it would be naïve to consider corporate houses as the direct agents of patriarchy. In fact, there is no direct correlation as such. The new metamorphosis of the capitalist remote job sector could provide an indirect impetus to the century-old patriarchal value system to the disadvantage of women.

Empowering the Marginalised: A Study of Female Vulnerability and the Impact of Social Security Schemes in Uttar Pradesh

Roli Misra Professor, University of Lucknow, Lucknow, Uttar Pradesh

Vishnu Kumar PhD Scholar, University of Lucknow, Lucknow, Uttar Pradesh

Seema Yadav PhD Scholar, University of Lucknow, Lucknow, Uttar Pradesh

This paper aims to explore the relationship between MGNREGA and PMAY-G in advancing women empowerment in rural Uttar Pradesh. The study is based on the primary survey conducted between September 2023 and July 2024. Sitapur district from Central region, Prayagraj district from Eastern region, Bareilly district from Western region, and Banda district from Bundelkhand, were selected on the basis of highest number of female beneficiaries in MGNREGA and PMAY-G in 2023-24. To statistically test the impact of these social security schemes and to identify the factors responsible for the women empowerment amongst 320 selected beneficiaries, binary logistic model was used. This paper also attempted to measure the magnitude of vulnerability of rural females in the selected districts of Uttar Pradesh through construction of Female Vulnerability Index (FVI). In all four districts, increase in income, improvement in health, and increase in level of awareness have been identified as critical indicators for women empowerment. District specific variations also reveal important insights — only in Bareilly district, change in family decision-making emerged as a significant factor. In Prayagraj and Sitapur districts, reduction in domestic violence was found to be statistically significant. The FVI further contextualised these findings where Bareilly was identified as the least vulnerable district with FVI score of 0.345. Sitapur (0.403) and Prayagraj (0.405) are relatively more vulnerable in FVI, highlighting persistent socio-cultural and structural challenges. Banda with the highest FVI score of 0.519 emerged as the most vulnerable district, pointing to deeply entrenched disadvantages that severely limit the empowerment prospects. By aligning, social protection with broader developmental goals such as education, digital inclusion, and gender responsive budgeting, the state can move closer to ensuring that marginalised women are not merely passive recipients of welfare but can become active participants in the development process.

Role of Platform Technology in Rural Transformation: A Study of Varanasi

Nidhi sharma Professor, Banaras Hindu University, Varanasi, Uttar Pradesh

Pradeep Kumar Singh Assistant Professor, JECRC University, Jaipur, Rajasthan

It is well known that technological progress is part and parcel of the process of economic development of any economy, and this is reflected in a change in the workforce structure. So, it is likely that the development process experienced by the rural economy of India would also reveal a diversification of rural workforce structure. It is high time to evaluate the impact

of technological changes on employment not only at the aggregative level but also at the disaggregate level.

To judge the implications of platform technology on rural employment and rural transformation, one has to have a notion about the employment structure of the rural workforce. Withdrawal of labour force from agriculture and shifting of the same to non-agricultural activities either within the rural sector or to the urban, semi urban and peri-urban areas through short-term migration is a major symptom of rural transformation. Development of rural infrastructure like road, transport, communication facilities etc.; the development of agro-based small and cottage industries; the differentials in wage rate between the farm and non-farm activities; and the rapid expansion of real estate like housing, are the factors responsible for such a process of rural transformation and they have accelerated the process of short-term migration of workforce from rural to urban as well as to semi and peri urban areas. Very often, rural and peri urban people have to undertake a variety of other non-farm activities for supplementing their deficit or for further well being of household. There is a tendency of decline in the proportion of workforce engaged in primary sector, accompanied by an increase in the same in tertiary non-farm activities and sometimes in the secondary sector albeit with some variation according to sex.

This paper attempts to analyse the impact of platform technology upon quality as well as diversification of employment and consequently rural transformation in rural and peri urban regions of Varanasi, Uttar Pradesh. Urban company has been selected in platform economy due to its better worker treatment and fair wages. Mixed method approach has been used to collect and analyse the data.

Psychological Reactions of Learners amid COVID Pandemic

Arpita Bhowmick Assistant Professor, Panchmura Mahavidyalaya, Bankura, West Bengal

The concerned survey aimed at capturing the variation in the psychological reaction of the learners studying at a higher educational institution located amidst the rural tribal village Panchmura of the Bankura district of West Bengal during the period of COVID pandemic. The information and data have been generated through the one-to-one telephonic interview method. Conversations were conducted and exchange of dialogue took place on the basis of a pre-designed questionnaire, with a cohort of 20 rural learners, chosen randomly.

The survey showed cases of absolute breakdown in confidence levels in some learners; while on the other hand learners with high self-esteem were also identified. Learners were not victims of boredom amid pandemic; however, aspect of innovation and new thinking was missing in most of them. In terms of the parameters such as participation in community developmental works, social connectivity, learning new skills, rumour test, and overcoming pressures of college dropout or marriage, their performance could be ranked in between well

to moderate. As against to such outcomes, the parameters in the concerned study which has captured the irritability and the mental stability level of the participants showed a different picture. It could be well seen from the study that the COVID inflicted pandemic period has made the lives of these youngsters more stressful and filled with anxiety. In fact, the deadly virus has made the learners all the more irritating – forcibly pushing them into heated arguments with their near ones very often.

Although the study has been limited to a smaller sample size and restricted to a single institution, yet these could be considered as an initiative in generating new pathways of investigation based on simpler descriptive statistical tools in the upcoming days. Furthermore, the author intends to expand the concerned research issue to a more broader and wider perspective in the near future.

Labour-Saving Appliances and Women's Work: Insights from the Indian Time Use Survey

Mohd Imran Khan Assistant Professor, NMIMS, Mumbai, Maharashtra

Gender disparities in time allocation between paid and unpaid work remain a persistent challenge in India, particularly for younger women. Women continue to spend disproportionately more time on unpaid domestic and caregiving activities than men.

According to the 2024 Time Use Survey (TUS), only 20.7% of women participate in employment-related activities compared to 60.8% of men, while 81.5% of women engage in unpaid domestic work relative to just 27.1% of men. Time allocation within households is shaped by production technologies and amenities, including the availability of labour-saving appliances for washing and cleaning, modern cooking fuel, and access to tap water. These resources have been shown to reduce women's domestic work burden and can enable greater participation in market activities.

This paper pursues two objectives. Firstly, it examines inequality in access to household production technologies, distinguishing between home appliances (such as washing and cleaning devices) and household amenities (such as modern cooking fuel and lighting). Secondly, it investigates the association between access to these appliances and women's time allocation, particularly the trade-off between domestic work and employment-related activities. These questions are motivated by recent debates linking stagnation and reversal in female labour force participation (FLFP) in India to persistent domestic work burdens.

The analysis reveals considerable inequality in access to home appliances, concentrated among households with higher schooling, incomes, urban residence, and social advantage. In contrast, access to household amenities has improved more broadly through government programmes. Appliance ownership is associated with higher time spent on employment

activities and a reduction in average time allocated to domestic work. However, the increase in employment time is modest (less than 10 minutes per day), whereas the reduction in domestic work is more substantial. Between 2019 and 2024, women's overall participation rates did not rise significantly, in contrast to estimates from the Periodic Labour Force Survey (PLFS). Instead, the key effect is a reallocation of time from unpaid domestic work to economic activities.

The findings suggest that household technologies can ease gendered time burdens and enable shifts toward paid work, but the benefits disproportionately accrue to higher consumption groups, with poorer and socially disadvantaged households experiencing limited gains.

Assessing the Dependence of Indian Agricultural Households on Farming Income

Vachaspati Shukla Assistant Professor, Sardar Patel Institute of Economic and Social Research , Ahmedabad, Gujarat

This paper investigates the extent and patterns of Indian rural households' dependence on farming income, drawing on unit-level data from the National Sample Survey's Situation Assessment of Agricultural Households for 2013 (70th round) and 2019 (77th round). Using multiple definitions of dependency, the analysis reveals substantial variation: in 2019, 54.0% of rural households qualified as agricultural, 38.9% were entirely dependent on farming, and 56.6% derived more than half of their household income from it. The average national share of farm income in agricultural household earnings was 53.4%, down from 59.8% in 2013, with a clear positive relationship to landholding size. Around 70.0% of agricultural households held less than one hectare of land, for whom farming contributed under 50.0% of income.

There are marked interstate disparities: Kerala recorded the lowest farm income share (26.4%) and Punjab the highest (70.9%). In 2019, the "equivalence household fully dependent on farm income" measure—accounting for partial dependence—was 47.3% of agricultural households (25.4% of rural households), a decline from 51.8% in 2013. This shift reflects two structural transformations: households moving away from farming and agricultural households reducing their reliance on it.

An examination of monthly farm income distribution reveals widespread insufficiency. The national average monthly farm income was â,¹5,380, with 77.6% of agricultural households earning below the official poverty line. Only 13.0% earned more than â,¹10,000 per month; in Jharkhand, Odisha, and West Bengal, this share was under 3.0%, with nearly 70.0% earning below â,¹2,000. High-income concentrations were observed in Punjab and Haryana, where 47.0% and 37.0% of households, respectively, exceeded the â,¹10,000 threshold. Using subsistence-level income as a benchmark, farming could support only 688.6 lakh out of India's 927.3 lakh agricultural households in 2019, leaving an "excess burden" of 238.7 lakh

households—about one-quarter—who must seek non-farm sources of livelihood. The burden is particularly acute in Jharkhand, West Bengal, Odisha, Bihar, and Uttar Pradesh.

The findings underscore that rural transformation in India is predominantly a "distress-push" process rather than "demand-pull," with agricultural households compelled to diversify income sources due to inadequate farm returns. Policy implications include promoting rural non-farm employment, enhancing productivity for smallholders, and developing income diversification strategies to reduce vulnerability. Without such measures, the farm sector will remain overpopulated relative to its capacity to provide subsistence-level livelihoods.

From Trash to Treasure: How Bengali Migrant Workers in Bengaluru find Opportunity in Scraps

Monalisha Chakraborty Assistant Professor, Madras Institute of Development Studies, Chennai, Tamil Nadu

Economic and environmental factors compel people from rural areas to migrate to other big cities for work. Bengaluru, being no exception, attracts the bulk of rural distress migrants from various parts of Karnataka and other states characterised by the widespread agrarian distress prevailing across the country. However, shrinking opportunities in the agrarian sector have not been compensated by improved opportunities for these migrants into the rest of the economy. Unskilled and economically deprived migrants are impelled to embrace a variety of insecure jobs in the marginal informal sectors. These sectors with low entry barriers, which require no education, minimal skills and capital, devise a viable option for many. Many unskilled and economically disadvantaged migrants are often forced to take on unstable jobs in the informal sector, including waste picking.

This paper attempts to bring the earning and non-earning dimensions of the rag pickers who have migrated from rural West Bengal to Bengaluru for work. The study is based on interviews and focus group discussions (FGDs) conducted with Bengali migrants in Bengaluru in 2019, 2020, 2021, and 2023.

The findings reveal that, the case of long-distance migration from West Bengal to the south Indian states indicates that large physical distances, linguistic barriers, and cultural differences do not deter distressed workers from migration. The growth of the urban population and real estate boom have created a great demand for unskilled and semi-skilled labour, including some types of informal sanitation workers – the rag pickers. Not only the jobs taken up by the rag pickers are tough and dirty but also the *jhupris* they live in are difficult places with trash all around. However, rag picking has made their lives better and improved their livelihood. Despite the insecurity and vulnerability they face and the exposure to societal challenges, the migrant rag pickers are reluctant to return to their homeland.

TECHNICAL SESSION 3.8

Rules, Resources, and Representation: How Gram Panchayat Budgeting Shapes Local Women's Workforce Participation

Renjini Rajagopalan Research Lead, JustJobs Network, New Delhi

Rural transformation is shaped by local governance and fiscal frameworks within which development unfolds. Decentralised rural governance in India is led by Gram Panchayats (GPs) at the lowest administrative level; empowered by the 73rd Constitutional Amendment, they are entrusted with undertaking local budgeting, which forms the foundations of rural economic policy. However, their ability to drive local economic change is shaped by procedural mandates, financial dependencies, local budgeting practices, and prevailing socioeconomic norms.

In rural India, women frequently engage in unpaid, underpaid or informal work, and their economic empowerment is linked to local developmental priorities and financial planning. Research on the relationship between public spending and women's empowerment spotlights gender-responsive budgeting (GRB) as a tool to align public resource allocation with women's empowerment goals. But the effectiveness of GRB in translating allocations into tangible outcomes remain a subject of ongoing debate. Moreover, the ties between GP-level budgeting, participatory planning practices, and local workforce dynamics—specifically to women's economic empowerment—remain under-explored.

This paper employs a mixed methods approach, combining multi-year budget analysis across anonymised GPs, in-depth interviews of key GP members and officials, and an examination of relevant legal and institutional frameworks, to understand how GP budgeting, in both design and implementation, influences rural transformation, with a particular focus on gender-responsive economic outcomes. It asks whether GP budgets operate merely as conduits of higher-tier policy or as active arenas for negotiating gender-equitable workforce participation and sectoral change.

Preliminary findings reveal weak percolation of GRB intent to the local level, constrained fiscal autonomy, and a subsuming of gendered concerns under broader developmental needs. It also indicates an over-reliance on centrally sponsored schemes such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) for furthering women's

employment without sufficient complementary local investments. Taken in tandem, the findings throw light on how rural governance systems can more effectively catalyse gender-equitable economic transformation.

Long-Term Impacts of Land Acquisition: Transitions in Singur's Agrarian Economy

Arjun Mukherjee PhD Scholar, Dr. B.R. Ambedkar University Delhi, New Delhi

This paper examines the long-term livelihood impacts of land acquisition in Singur, West Bengal, drawing on in-depth interviews with both landed and landless households in Khasherberi.

While the 2016 legal verdict restored ownership rights to many, the physical condition of the returned land rendered much of it uncultivable. Operational holdings have sharply declined for both 'willing' and 'unwilling' farmers. For the landless agricultural labourers and unrecorded tenants, the absence of compensation coupled with reduced availability of farm work has intensified economic vulnerability. The post-acquisition economic shift is evident in the move towards non-farm work such as carpentry, iron casting, jewellery wax-setting, and bidi-making. Earlier these occupations supplemented farming but have now become primary income sources for many in the village. Agriculture is increasingly seen as unviable to the next generation, while the industrial jobs promised to acquisition supporters never materialised, leaving both camps disillusioned.

Gendered impacts, often invisible, emerge as a critical dimension. Women's agricultural contributions have diminished with the decline in cultivable land and livestock ownership. Reduced mobility and a turn to low-paid, home-based activities such as wax-setting have curtailed women's mobility and exposed them to health risks. The erosion of women's roles in farming represents a deeper social and cultural loss that income measures fail to capture. The state's welfare measures for the project affected area, especially the aid of 16 kg rice and â‚12,000 to unwilling farmers and some landless labourers monthly, offers partial relief but excludes many. It removes all those people who were in favour of industrialisation from being beneficiaries. This also includes vulnerable groups such as landless agricultural labourers and unrecorded tenants, who did not receive any form of monetary compensation also.

The Singur case underscores that returning land on paper does not restore agrarian livelihoods. Without ecological rehabilitation, capital support, and inclusive policy design, land acquisition triggers lasting economic displacement even when there is no spatial displacement as noted in the studies of development-induced displacement. The findings call for a rethinking of post-acquisition recovery policies to address structural damage, ensure gender-sensitive rehabilitation, and rebuild the economic and social fabric of affected farming communities.

Locating Women in Unpaid Economic Labour of the Home-based Handloom and Powerloom Industry.

Hiba Rahman PhD Scholar, Aligarh Muslim University, Aligarh, Uttar Pradesh

The substantial contributions of women labourers in the home-based handloom and power loom industries are frequently overlooked and undervalued. In the family-based production process, women are essential to the process, performing duties other than weaving, such as feeding spools, cutting threads, wrapping clothes, etc. These are allied work, which is the key input to complete a finished weaving product. Nevertheless, their labour is frequently regarded as merely assisting or helping male family members, a category that undermines the significance of their work and reinforces the notion that their contributions are secondary. This marginalisation is further exacerbated by socio-cultural norms that limit the employment opportunities available to women, limiting them to low-paying or unpaid home-based work. Consequently, their economic roles are obscured, and their labour is exploited within the household.

The objective of the paper is to examine the character and extent of women's involvement in the small-scale home-based handloom and power-loom industries with a particular emphasis on the Invisibilization of these contributions by socio-cultural norms and gendered labour division. To further explore the intra-household dynamics that impact their economic participation, the study builds on in-depth qualitative interviews conducted with the women workers. The researcher's question focuses on work hours, production activities, and income. A few case studies from handloom and power loom clusters provide localised insights into the lived experiences of these women workers. The research also examines the dual burden women bear, balancing unpaid domestic responsibilities along with economic production activities, and how it impacts their recognition in the economic assessments.

The research found that the majority of women's work is not counted in family income as they are considered secondary to their male counterparts. Women's lack of knowledge about production and marketing works against them in this industry, and their work is taken as an extension of domestic work, which is considered an unrecognised skill, and as a result, they are unpaid or underpaid in this industry, making them invisible contributors.

Sri City Special Economic Zone: Reshaping Rural Andhra's Workforce and Economy

Samuel Aravind Gunnabathula PhD Scholar, Yogi Vemana University, Kadapa,
    Andhra Pradesh

Anitha Mannem Professor, Yogi Vemana University, Kadapa, Andhra Pradesh

Special Economic Zones (SEZs) serve as vital engines for economic development in India, promoting industrialisation, export growth, and employment in rural areas. This study analyses the socioeconomic effects of Sri City SEZ, a multiproduct zone in Andhra Pradesh's Tirupati district established in 2007, on neighbouring rural communities.

Covering 1,537 hectares and accommodating over 200 companies in sectors such as automotive, electronics, and food processing, Sri City benefits from robust infrastructure, fiscal incentives, and the Andhra Pradesh Employment of Local Candidates Act (2019), requiring 75% local hiring. Grounded in agglomeration economics and labour market transition theories, the research explores workforce shifts, income patterns, and social equity in seven villages—Cherivi, Gollavaripalem, Chengambakam, Appaiahpalem, Mallavaripalem, Aroor, and Irugulam—while linking to Sustainable Development Goal (SDG) 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation, and Infrastructure).

A mixed-methods design combines primary data from a 2024 household survey of 348 respondents (stratified by caste and village, using Kobo Toolbox in Telugu and Tamil) with secondary SEZ metrics from 2011-12 to 2023-24 via the Visakhapatnam SEZ portal. Quantitative analyses include descriptive statistics, chi-square tests, analysis of variance (ANOVA), and regressions (linear for literacy, ordinal logistic for income, logistic for satisfaction). Qualitative data from NVivo-coded responses address job quality and displacement.

Results indicate a major labour market transformation: 57.76% of households depend on salaried jobs (70% SEZ-related), diminishing agriculture (8.33%) and signalling non-farm shifts. Female participation reaches 30.0% in direct SEZ employment, exceeding India's 25.0% average and advancing SDG 5, but issues like safety and wages persist. Socioeconomic gains include 83.33% *pucca* housing, yet 64.08% earn â,¹1-2 lakh annually, and 82.47% are landless (60% due to SEZ acquisition with poor compensation). Regressions show land contribution and benefits predict literacy ($R^2 = 0.45$, $p < 0.01$) and income (odds up by 0.45-0.60), but agriculture hampers earnings ($\beta = -0.80$, $p < 0.05$); no link between land loss and satisfaction ($\chi^2 = 0.92$, $p = 1.000$).

Sri City's metrics—â,¹2,144 crore investment, â,¹1,063 crore exports (17% decline in 2023-24), 4,076 jobs—yield high employment intensity (0.80 jobs/â,¹ crore), surpassing Kakinada (0.17) and IFFCO (0.045) but are below Naidupeta (1.73) and VSEZ (3.75), driven by diversification and training (5,000 workers/year). Sri City fosters rural change via jobs and gender inclusion but intensifies inequalities through displacement and low wages.

Recommendations are to update minimum wages (static since 2011), boost skills training, improve compensation, and adopt eco-practices for sustainability. This fills micro-level gaps in labour economics, informing policies for equitable SEZ growth in emerging markets. Future work needs longitudinal studies.

From Mud Walls to Milestones: Seventy Years of Transformation in a Dalit Settlement of Tamil Nadu

Mani N Associate Professor, Bharathiar University, Coimbatore, Tamil Nadu

This article explores the socioeconomic trajectory of a Scheduled Caste (SC) settlement established in 1954 in Kangeyam Taluk, Tiruppur District, Tamil Nadu, providing a detailed account of the community's experiences over seven decades. The settlement was originally conceived as part of a welfare initiative under the government of Chief Minister K. Kamaraj, aimed at addressing the chronic landlessness and socioeconomic marginalisation faced by Dalit agricultural labourers. Comprised initially of 26 houses, the colony represented a modest yet significant step towards social justice and inclusion, offering land and shelter to a community historically excluded from mainstream development and governance. Over the years, the settlement has faced multiple structural challenges, including chronic poverty, recurring droughts, seasonal and permanent migration, bureaucratic corruption, and systemic exclusion from formal credit systems. Despite these adversities, the community has demonstrated remarkable resilience, perseverance, and adaptability.

The study draws on a combination of demographic, educational, occupational, and housing data to trace the community's gradual socioeconomic transformation. Notably, the settlement has achieved significant gains in literacy rates, access to higher education, and occupational diversification, reflecting both the effectiveness and limitations of state welfare interventions. Gendered patterns of education and labour participation are also explored, highlighting evolving roles within the community and the impact of educational attainment on occupational mobility. At the same time, the study underscores persistent barriers to development, including land fragmentation, credit exclusion, and exploitation by intermediaries, which constrain the long-term benefits of welfare schemes.

By examining this settlement, the paper contributes to broader discussions on the interplay between state-led welfare, community agency, and structural inequities, offering valuable insights into the processes of social transformation among marginalised Dalit communities in rural Tamil Nadu. This paper will shed light on reality.

Rural Income Diversification and Agrarian Capitalism: A Class-Based Comparative Study of Eastern and Western Uttar Pradesh

Navneet Kumar Assistant Professor, Aryabhatta College, University of Delhi, New Delhi

Deepak Kumar Mishra Professor, Jawaharlal Nehru University, New Delhi

The uneven trajectory of agrarian transition in India continues to raise fundamental questions about income generation, employment diversification, and the reproduction of rural classes. While classical Marxist debates conceptualise the agrarian question in terms of the dissolution of the peasantry and the emergence of a fully capitalist countryside, recent scholarship points to hybrid and regionally variegated patterns of rural transformation.

The present paper engages with these debates by examining income diversification, labour absorption, and accumulation across agrarian classes through an intensive field survey of 320 households across two villages each in the western (Muzaffarnagar and Firozabad) and eastern districts (Amethi and Sonbhadra) of Uttar Pradesh (UP). These regions offer a striking contrast, where while the western region represents a relatively advanced agrarian economy with commercialised agriculture and higher levels of mechanisation, the eastern region is characterised by fragmented holdings, tenancy dependence, and semi-feudal arrangements such as sharecropping and usufructuary mortgage. Such a contrast thus allows for a comparative understanding of uneven capitalist agrarian transition in the countryside in general and the regional dynamics of agrarian capitalism in UP, in particular.

Peasant households in both regions have been classified into different classes, viz., absentee landowners, capitalist farmers, middle peasants, small peasants, poor peasants, and agricultural labourers, based on the Modified Exploitation Index. The net incomes of the peasant households have been calculated using the FAS methodology of income estimation. The results for the class-based analysis of gross value of output per household and per hectare of gross sown area reveal stark class differentiation, with the class of capitalist farmers and middle peasants generating significantly higher crop incomes than all the other classes in both regions. For instance, capitalist farmers, in the western region, on average have a gross value of output of â,¹4.49 lakh per household (â,¹2 lakh per ha), which is nearly four times greater than the gross value of output generated by small peasants. Eastern region, by contrast, records much lower absolute values, with capitalist farmers generating â,¹1.52 lakh per household (â,¹41,000 per ha), but the inter-class gap is narrower, indicating relatively less polarisation. Income diversification indices reveal that in Western UP, higher classes diversify strategically, deriving 15 to 25% of their income from non-farm sources such as trade, transport, and agri-services, while lower classes rely disproportionately on casual wage labour and remittances for survival.

A major finding concerns the dual character of rural non-farm employment in the two regions. In Western UP, while capitalist farmers and middle peasants dominate high returns from rural non-farm employment by engaging themselves in shopkeeping, transport, and dairy

marketing, poor peasants and labourers participate in low-return casual construction work or migrate seasonally for brick kiln work. Contrary to this, in Eastern UP, where agricultural incomes are low, migration plays a more central role. Nearly 40% of small and poor peasant households send at least one migrant, mainly to urban centres in the state or to metropolitan cities, and remittances form 20 to 25% of household income for these classes. This confirms that diversification in the Eastern UP is largely distress-driven rather than accumulation-oriented.

Furthermore, the analysis of labour days shows that capitalist farmers and middle peasants in Western UP contribute a smaller share of family labour to cultivation (due to hired labour dependence) and reallocate household labour to rural non-farm employment. Agricultural labourers and poor peasant households, by contrast, contribute over 80% of their available labour to wage employment, highlighting their dependence on commodified labour markets. In Eastern UP, family labour participation is higher across all classes, reflecting low mechanisation and persistent petty production. The diversification index at the household level shows a bifurcation where upper classes diversify to stabilise and accumulate, whereas lower classes diversify as a survival strategy (consistent with Ellis' 1998 framework of "push" vs. "pull" diversification).

Who accumulates in agriculture remains deeply structured by class and caste. In Western UP, accumulation is concentrated among capitalist farmers, who invest in tube-wells, tractors, and cash crops such as sugarcane. Middle peasants also reinvest but on a smaller scale, often through cooperative purchase of machinery. Small and Poor peasants rarely accumulate; instead, they are increasingly leasing out land to capitalist farmers or migrating to supplement income. Eastern UP shows much lower accumulation rates, with fewer households able to purchase machinery or improve irrigation infrastructure. Here, even middle peasants depend heavily on custom-hiring services for mechanised operations. This reinforces the argument that differential access to means of production under capitalism exacerbates rural differentiation. The comparative analysis also underscores that Western UP represents a relatively advanced stage of agrarian capitalism with wage labour hiring as the primary mode of surplus appropriation, a growing class of capitalist farmers, and high inter-class income inequality. Eastern UP, by contrast, embodies a slower, uneven transition marked by fragmented holdings, semi-feudal tenancy, and lower agricultural productivity, producing widespread but relatively less polarised poverty. This divergence reflects not just differences in agro-ecology and market access but also historical trajectories of land reforms, state investment, and caste power relations.

The findings speak directly to the contemporary agrarian question: rather than a homogeneous peasantry being dissolved into a rural proletariat, India's countryside reveals multiple pathways, including persistence of petty commodity production, semi-proletarianisation, and new forms of accumulation by dispossession. These findings further reiterate the fact that the agrarian question today is as much about the terms of labour's incorporation into capitalism as it is about the transformation of production relations.

Caste, Labour, and the Begar of Rural Sanitation Workers: Continuities from Jajmani to Contemporary Rural Development

Shamsher Singh Assistant Professor, FLAME University, Pune, Maharashtra

The task of cleaning both public and private spaces has historically been considered a caste-based occupation relegated to those positioned lowest in the oppressive caste hierarchy of the Indian society. In most regions, sanitation workers (*safai karamcharis*) are overwhelmingly Dalits, and other oppressed castes, and the association between caste and sanitation work has remained an inescapable burden for generations. Practice of *jajmani* (patron-client relationship) has obligated specific services from certain castes in the feudal agrarian economy. Sanitation services were among these tasks where the individual landed households employed/attached members from the formerly known "untouchable" castes to cater to them.

The modern governance mechanisms such as the rural development and panchayati raj institutions (PRIs) were established to eradicate these caste-based occupational ties. The employment of sanitation workers by the state is, in principle, a progressive step towards making the occupation secular, modern, and free from caste-based compulsion. By replacing individual employers in the traditional *jajmani* system with the state as employer, this arrangement was intended to eliminate the discrimination, humiliation, and *begar* that were rampant in feudal village society.

This study is conducted among rural sanitation workers in Haryana, one of the few states to have institutionalised such workers under its Panchayati Raj Department. Haryana also has the distinction of having an active union of these workers who have been employed on temporary basis for the last 18 years. The study investigates how unpaid or coerced sanitation labour persists in rural India as an "institutional **begar**", examining continuities from caste-encoded *jajmani* obligations to today's programmatic and contractual arrangements under rural development schemes.

The research maps mechanisms—administrative mandates, informal coercion, welfare gatekeeping, irregular payments, and contractorised precarity—through which compulsion is reproduced despite formal abolition of *begar*. It discusses the strategies and role played by the union and collective actions to demand for better working and employment conditions, social security, safety equipment, higher wages, and permanent employment.

Gender Mapping in Segregated Farm Activities in Mirzapur District of Uttar Pradesh

Reshma Gupta PhD Scholar, Banasthali University, Tonk, Rajasthan

Swati Shastri Associate Professor, Head of the Department of Economics, Banasthali University, Tonk, Rajasthan

Women not only constitute half of the population but also play a crucial part in overall agricultural production, either as agricultural labourers or cultivators. However, women are not recognised as equal to men in creating productivity, resulting in less pay to women for the same work. Many studies show the existence of gender pay discrimination not only between occupations but also within occupations.

This study aimed to examine gender participation in farming operations in the Mirzapur district of Uttar Pradesh. It also attempted to understand the explanatory variable, which is responsible for the engagement or non-engagement in farming operations such as land preparation, winnowing, threshing, irrigation, plant protection, etc. Male and female agricultural labourers, cultivators, and those who possess land but work part-time as labourers were selected as respondents. The study has employed primary data and applied a convenience sampling method for data collection, with data analysis conducted through descriptive statistics and binary logistic regression.

The results indicate that male participation is significantly higher in land preparation, sowing, fertiliser applications, irrigation, and plant protection operations, while females performed intercultural operations such as transplanting, weeding, and harvesting. It is also evident that land preparation, irrigation, plant protection, and fertiliser applications are associated with high-paid farm operations, while winnowing, sowing, threshing, and harvesting are considered low-wage operations. Crop marketing was primarily the responsibility of males, and both females and males participated equally in threshing. However, females' earnings were lower than males due to the involvement of male workers in technical and machinery-related tasks such as land preparation with tractors, time-consuming irrigation, and night duties for plant protection. This contributed to a significant gender pay gap in the Mirzapur district.

Based on gender mapping, the study recommends additional training for females to ensure their equal participation in agriculture and to reduce pay disparities. The findings highlight the need for gender-specific training for agricultural practices in the region.

Rural Transformation Amid India's Growth Surge: Development Outcomes from Arunachal Pradesh in the Northeast

Kanchan Devi Researcher, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

India's post-liberalisation growth has delivered high gross domestic product (GDP) expansion and increased market integration, but it has also exacerbated spatial inequalities. While urban and coastal regions have benefitted disproportionately, rural and geographically peripheral regions, such as the Northeast, have seen limited trickle-down effects. Arunachal Pradesh exemplifies this paradox, with continued deprivation despite above-average gross state domestic product (GSDP) growth. The concept of rural transformation, encompassing shifts in economic, social, and institutional structures offers a broader lens than traditional rural development and is essential to understanding persistent inequalities in these frontier contexts.

Arunachal Pradesh remains underrepresented in rural transformation research despite its unique demographic, geographic, and institutional features. With 77% of the population residing in rural areas and facing persistent development deficits, the state offers a critical case for examining the uneven outcomes of India's growth trajectory. The existing literature has largely focused on more accessible states, overlooking complex rural realities in remote regions. This study seeks to fill that gap by situating Arunachal Pradesh within national debates on spatial inequality and transformation, offering insights relevant to other marginalised regions facing similar developmental constraints.

The study examines rural transformation across eight North-Eastern states, with a focus on Arunachal Pradesh. It uses secondary data from sources such as the Population Census (2001, 2011), Economic and Political Weekly Research Foundation (EPWRF), and Ministry of Statistics and Programme Implementation (MOSPI) over two periods: 2001–2010 and 2011–2023. Three composite indices: Rural Development Index (RDI), Rural Transformation Index (RTI), and Rural–Urban Coordination Index (RUCI) were constructed using normalised indicators across economic, social, infrastructural, and demographic dimensions. Variable weights were derived using the Proportion of Total Variance Method. Composite scores were analysed to assess inter-state variation, temporal shifts, and spatial inequalities. Spearman's correlation and Coefficient of Variation were used for comparative assessment.

This study finds that rural transformation in Arunachal Pradesh has progressed unevenly over the last two decades. While infrastructure and economic indicators have significantly improved, social development, particularly in health, education, and equity remains sluggish. The RDI rose from 0.64 to 0.71, driven by gains in infrastructure and economy, with limited social progress. Spatial disparities persist, with central and eastern districts lagging. Gender gaps, urban–rural divides, and limited employment diversification further hinder inclusive growth. Although reliance on traditional livelihoods is declining, alternative opportunities are scarce. Rural transformation is underway but is constrained by institutional, social, and geographic bottlenecks.

To ensure inclusive and sustained rural transformation in Arunachal Pradesh, policies must prioritise balanced investments across infrastructure, social development, and economic diversification. Emphasis should shift towards strengthening health, education, and gender-inclusive institutions, while addressing persistent inequalities in workforce participation. Support for agro-based and non-farm livelihoods must be expanded through credit access, skill training, and market linkages. Enhancing rural–urban coordination is vital, particularly through improved transport, service delivery, and value chain integration. Context-specific planning that reflects local socioeconomic realities and institutional capacities will be key. Future interventions should align with a place-based development approach, adaptable to Arunachal Pradesh's unique geographic and cultural setting.

TECHNICAL SESSION 3.9

Does Caste, Class, and Gender Mediate Inclusiveness? Reflections from the Study of Two Villages in North East Karnataka

Suma Scaria Associate Professor, Central University of Karnataka, Gulbarga, Karnataka

India as a country and Karnataka as a state within India is observing high economic growth in current times. However it is essential to see how faraway this growth has been inclusive regarding caste and gender ? Does social arrangements in terms of public irrigation mediate inclusive growth in land, education, and health? This close reading of two villages in north east Karnataka displays that tall economic growth India is observing in current periods have been unsuccessful in filtering down to the grass root level. On the other hand provisioning of social overhead capital such as public irrigation can mediate inclusiveness in caste and gender.

This study shows a comparative picture of developmental trajectory of two villages in north east Karnataka, a relatively less developed and parched regions in India. Since majority of the farmers depend on rain fed irrigation we have selected one village that depends on public irrigation and another on private irrigation. Our findings shows that provisioning of public good such as public irrigation have trickledown effect on lower strata of the society with regard to caste and gender in terms of land, education and health.

The contribution of this study stands at three levels: Firstly, this study shows that development is not linear as usually assumed. Any attempt to understand the processes involving inclusive growth should study economy in relation to social stratification. Secondly, this study shows that an integrated approach rather than a compartmentalised approach is essential to understand the process of inclusive growth. Thirdly, the study shows that the role of the state has increased rather than decreased in the era of globalisation. The trickle-down impact of economic growth is somewhat stronger where there is public provisioning of basic goods such as irrigation especially in arid regions such as rural north east Karnataka in India.

Regional Workforce Dynamics in Top Manufacturing States in India: Insight from Location Quotient and Shift Share Analysis

Ashish Arun Andhale Assistant Professor, MIT-World Peace University, Pune, Maharashtra

Naresh Bodkhe Professor, Gokhale Institute of Politics and Economics, Pune, Maharashtra

This paper investigates regional workforce dynamics in India's leading manufacturing states—Maharashtra, Gujarat, Tamil Nadu, Andhra Pradesh, and Uttar Pradesh—using Location Quotient (LQ) and Shift-Share Analysis (SSA) as the primary analytical tools. The study situates itself within the broader debate on rural transformation and the rise of non-farm employment, highlighting how manufacturing has acted as a bridge between agricultural livelihoods and industrial labour markets. By examining long-term structural shifts between 2000–01 and 2021–22, the research provides insights into industrial concentration and sectoral specialisation. The introductory discussion emphasises the significance of industrial concentration for regional competitiveness, noting that the spatial clustering of industries is often shaped by resource availability, skilled labour, and proximity to markets.

A review of the literature situates the analysis within ongoing debates on regional development, demonstrating how both LQ and SSA approaches have been applied internationally and within India to capture structural change, competitive advantage, and labour mobility. Previous studies are shown to highlight not only theoretical advancements in these techniques but also their empirical utility in assessing employment trajectories across diverse contexts.

Empirical findings reveal marked variations in industrial specialisation across states. Maharashtra, traditionally strong in pharmaceuticals and furniture, has shifted towards fabricated metals, automobiles, and machinery, while Tamil Nadu has consolidated its strength in textiles, apparel, and motor vehicles. Gujarat has deepened its specialisation in chemicals and textiles, though its pharmaceutical base has weakened. Andhra Pradesh presents a more volatile industrial base, with tobacco's earlier dominance giving way to food processing and pharmaceuticals, though overall employment growth has lagged. Uttar Pradesh maintains competitiveness in traditional sectors such as leather, while simultaneously gaining momentum in electronics and diversified manufacturing. These patterns indicate both continuity and transformation in state-level industrial landscapes, shaped by regional policies, sectoral dynamics, and national growth trends.

The SSA further reveals that in most states, industry mix effects—reflecting national sectoral growth—are the primary drivers of employment change, while regional competitiveness has contributed less consistently. For instance, in Maharashtra and Tamil Nadu, a majority of industries experienced employment gains aligned with national growth, whereas only a smaller subset benefited from regional advantages. Gujarat and Uttar Pradesh displayed more balanced dynamics, while Andhra Pradesh showed structural vulnerabilities with fewer industries demonstrating competitive strength.

In conclusion, the paper argues that industrial development in these states plays a critical role in rural transformation by generating non-farm employment opportunities, facilitating labour mobility, and diversifying rural livelihoods. While certain states have leveraged diversification to build competitiveness, others face challenges of industrial decline or concentration in a limited number of sectors. The study highlights the importance of tailored industrial and workforce policies to sustain employment growth and ensure balanced regional development.

A Study on Seaweed Cultivation and its Impact on Employment and Income in Ramanathapuram District

Sathishkumar Ramakrishnan Guest Lecturer, Alagappa Govt Arts College, Karaikudi, Tamil Nadu, Guest Lecturer

Ramesh Kumar Kulanthaivelu Assistant Professor, Alagappa University, Karaikudi, Tamil Nadu

India has increasingly recognised seaweed cultivation as a blue-economy sector with immense potential for sustainable livelihoods, climate resilience, and export growth. Tamil Nadu, particularly the Ramanathapuram district covering Palk Bay and Gulf of Mannar coasts, has historically been the epicentre of seaweed collection and farming, dominated largely by women. With policy support through the Pradhan Mantri Matsya Sampada Yojana (PMMSY), state-level initiatives, and private mariculture ventures, seaweed cultivation has expanded rapidly in recent years.

Against this background, the present study examines the employment and income effects of seaweed farming in Ramanathapuram district, focusing on gender participation, household livelihoods, and economic feasibility. The study employed both primary and secondary data sources. Primary data were collected in 2025 through a structured survey of 57 seaweed cultivators in Thiruvadanai taluk, with women accounting for 56% of respondents. Tabular analysis, percentage distribution, and cost–return calculations were used to assess labour patterns, production costs, revenues, and profitability. Secondary data from government, Food and Agriculture Organization of the United Nations (FAO) reports, and earlier studies were integrated to contextualise local findings within global and national seaweed developments.

Results reveal that seaweed farming provides consistent employment across age groups, with the majority of cultivators belonging to the 30–40 year bracket. Women dominate cultivation activities, reflecting broader patterns in Asian seaweed economies. The economic analysis indicates that the average cost of cultivation per unit was â¹680, with female cultivators investing slightly higher (â¹27,200 for 40 units) but also earning higher revenue (â¹44,000) than their male counterparts. Net profits were estimated at â¹16,800 for women and â¹15,960 for men per season, highlighting the viability of seaweed cultivation as a supplementary income source. On an aggregate scale, 78 units under the sample produced 14,040 kg (raw weight),

translating into 1,560 kg of dried seaweed and revenue of â,¹85,800 per season. Respondents reported improved access to food, clothing, household assets, and the ability to finance social obligations such as marriages.

Despite its promise, the sector faces challenges including climatic shocks, seed shortages, lack of minimum support price, and inadequate infrastructure. The study recommends institutional support through self-help group (SHG)-based farming models, weather-risk insurance, improved transport and drying facilities, and sustained buy-back arrangements.

In conclusion, seaweed farming in Ramanathapuram district has emerged as an economically viable and socially inclusive livelihood option, particularly for women, reducing seasonal unemployment in fishing communities. With continued policy support, technology adoption, and value-chain integration, the sector can significantly contribute to India's blue economy, poverty alleviation, and gender empowerment goals by 2030.

Solopreneurs in India: Opportunity or Challenges

Manik Kumar Assistant Professor, Govind Ballabh Pant Social Science Institute, Prayagraj, Uttar Pradesh

Solopreneurship in India is not a new phenomenon; individuals such as artisans and small-scale entrepreneurs have been working independently for centuries. In recent years, solopreneurship has witnessed significant global growth. Key drivers of this rise include the expansion of gig work, the proliferation of digital platform services, the increasing prevalence of outsourcing practices, the impact of the COVID-19 pandemic, and the emergence of advanced technologies such as artificial intelligence (AI) and Internet of Things (IoT). Recent estimates indicate that solopreneurs constitute nearly 30% of the Indian workforce. The Government of India has also introduced a range of policy initiatives, such as the Start-up India and Stand-up India programmes, which are primarily aimed at fostering and promoting solopreneurship.

A review of the existing literature on solopreneurship indicates a paucity of India-specific studies. Although solo self-employment is becoming increasingly significant in shaping India's labour market dynamics, comprehensive empirical investigations remain limited. To bridge this gap, the present study tries to find earnings and working hours using recent Periodic Labour Force Survey (PLFS) data across the two-digit industrial classification.

Across most industries, males tend to work longer hours than females in both rural and urban areas, with average working hours generally being slightly higher in urban regions, and with considerable variation across sectors, ranging from less than 30 hours to more than 65 hours per week. Working hours vary considerably across industries, with agriculture-related manufacturing such as food, textiles, wood, and paper averaging around 40–55 hours per week, where men consistently work longer than women. Extreme working poverty is prevalent among both rural and urban workers, with women disproportionately concentrated in low-paid

manufacturing and education-related sectors, while men are more affected in construction, transport, and informal manual services; moreover, even in modern service industries such as finance, law, information technology, and real estate, a considerable share of workers earn below the $2.15 per day threshold, underscoring persistent structural wage inequalities.

These findings highlight the dual nature of solopreneurship—as a growing avenue of economic participation but also one marked by structural inequalities—underscoring the need for targeted policies to enhance income security, social protection, and sustainable opportunities for solo workers.

Public Expenditure on Rural Development in India since 1980

Jyotsna . Professor, Shyama Prasad Mukherji College for Women, University of Delhi, New Delhi

In India, around 2/3rd of the population live in the rural area and earn their livelihood from agriculture and allied activities. Infrastructure, inadequacy, and insufficiency in public provisioning of social services are still a major concern to the area. A substantial increases in public spending on rural development (employment and infrastructure programme) does has some noteworthy influence in improving the situation of the rural poor. On the other hand, effective utilisation of resources in most of the schemes has been a reason for concern for policy maker and the area for analysis in this paper.

Neoliberal reforms have reduced the states' capacity to spend on essential social services, and rural development. Over time, spending priorities have shifted towards areas like urban development and housing, while rural development remains underfunded. This shift contributes to growing poverty, vulnerability, and inequality, and weakens access to basic services. Another important feature that is to be considered is that Indian states vary widely in income, population, geography, and political commitment, which is reflected in their differing levels of social sector spending. To address inequality and promote development, it is essential to increase both overall social sector expenditure and capital investment in key areas such as health, education, labour welfare, and rural development. The idea of inclusiveness should not be limited to reducing poverty—it must also ensure equal opportunities, social and economic mobility, and support for vulnerable groups. Achieving equity, dignity, and barrier-free access requires strong and well-planned state intervention to promote social and economic progress.

The study utilises data from Public Finance Statistics (Ministry of Finance), State Finance Reports (Reserve Bank of India), and Indian Census reports (1971–2011) to examine trends in Union and State government spending. It calculates Aggregate Public Expenditure (APE)—comprising capital disbursement and revenue expenditure—and analyses development and non-development expenditures. By incorporating decadal population growth rates, the study presents findings on a per capita basis, enabling a detailed assessment of expenditure patterns and their implications for social and economic indicators.

Gender and Labour Migration: A Study of Few Migrating Districts from Five Top Selected Indian States

Anisur Rahman Professor, Jamia Millia Islamia University, New Delhi

Gender and labour migration looks at how gender roles, norms, and disparities affect migration patterns and the experiences of men and women alike. It investigates how migration affects gender dynamics and economic results for families and communities. This area of study examines how gender influences migration choices, the kinds of occupations migrants pursue, and the challenges and opportunities they face. Gender roles affect migration patterns and motivations; in certain cultures, male migration is often emphasised for economic purposes, while in others, women may relocate primarily for marriage or to provide family assistance. Migration can result in the increasing presence of women in specific industries (such as domestic labour or the garment sector) and the broadening of job opportunities for men, but it may also reinforce existing gender disparities in the workforce. Migration may disrupt conventional gender roles, provide economic empowerment for certain women, but can also result in heavier workloads and increased responsibilities for those who remain behind. Women migrants, especially, are at heightened risk of violence, exploitation, and trafficking because of their restricted access to legal migration routes and social assistance.

Migrant remittances can represent a crucial income source for households and communities; however, the effects of these remittances on gender roles and local development are multifaceted and vary based on context. Gulf migration is a cultural phenomenon in the context of the socioeconomic impact of Gulf migration and its reflection in the form of cultural reflection in the framework of culturalisation of Gulf migration in rural North India in the context of nexus of gender and labour migration.

The objective of this research paper is based on the socioeconomic and cultural impact of nexus of Gulf migration in North India in the context of the phenomena of the nexus of gender and labour migration in the perspective of globalisation of migration in the 21st century. The methodology of the research paper is based on multiple round field surveys in purposively selected North Indian states — Uttar Pradesh, Bihar, and Rajasthan from 2023 to 2024. Qualitative data are collected through ethnographic technique under the saturation stage of information among 1500 return migrant labourers. Collected primary data are analysed using narratives, descriptions, and case studies.

Research explores extensive migration trends and their effects on gender-specific labour markets and societal frameworks. Research examines particular industries, workplaces, or communities to gain insight into the experiences of migrants and the interactions of gender relations within these environments. Qualitative research employs interviews and narratives to investigate the motivations, experiences, and perceptions of individual migrants regarding their journeys and outcomes.

The findings of the study show that the function of migration is being reflected in the form of the socioeconomic and cultural impact of Gulf migration on migrants' households in the periphery of the nexus of gender and labour migration with its contradiction, discrimination and challenges of migration. Therefore, the present research paper encourages researchers and policymakers to further research in this area with an innovative approach as an aspect of the socioeconomic and cultural impact of Gulf Diaspora under the vision of Viksit Bharat@2047.

Turbulence and Trends: A Two-Decade Analysis of Income Patterns in Fisheries Cooperative Societies in Kerala, India

Akhila Kumaran PhD Scholar, Tata Institute of Social Sciences, Mumbai, Maharashtra

This study presents a comprehensive investigation into the long-term income trends of seven fisheries cooperative societies located in Kerala, India, aiming to shed light on how these financial patterns reflect the broader themes of institutional resilience, socioeconomic vulnerability, and the implications they have for community development. By analysing annual income data spanning over two decades, from 1999 to 2021, the research adopts a robust mixed-methods analytical framework. This framework includes the examination of both real and nominal income values, the use of log-transformed trend modelling to capture underlying patterns, and advanced forecasting techniques such as Autoregressive Integrated Moving Average (ARIMA) models to predict future income trajectories. To ensure accurate comparability across different years, the income figures are adjusted using Consumer Price Index for Agricultural Labourers (CPI-AL), which accounts for inflation and changes in purchasing power over time.

The studied seven fisheries cooperative societies exhibit distinct income trajectories, with some showing dramatic fluctuations that highlight significant financial instability. Others demonstrate an initial period of strong income growth, which unfortunately gives way to a prolonged and steady decline, indicating difficulties in maintaining financial momentum and sustainability. The overarching trend identified among these societies is one of long-term income decline or stagnation when considered in real terms, signalling structural fragility within these community-based institutions. From a community development perspective, these financial trends are particularly important as fisheries cooperative societies play a critical role in sustaining local livelihoods and supporting the socioeconomic fabric of coastal communities. The observed volatility and stagnation in income levels reflect deeper systemic issues, including weak institutional capacity, an overreliance on short-term financial interventions, and possible ecological stressors affecting fishery resources.

By contributing valuable empirical evidence to the relatively limited research on the economic aspects of grassroots marine cooperatives, this study highlights the urgent need for more proactive and holistic policy interventions. It advocates moving beyond mere reactive financial aid towards strengthening participatory governance, enhancing financial literacy

among cooperative members, and promoting resource diversification to improve the resilience and long-term sustainability of these institutions. This research thus offers both critical insights and practical pathways for supporting community-driven marine resource management and development in Kerala.

Women's Heterogeneity in Agricultural Technology Adoption and its Impacts (W-HAI): A Bibliometric and SPAR-4-SLR Review using TCCM Framework

Jyothish Vijayan PhD Scholar, Indian School of Mines (ISM), Dhanbad, Jharkhand

Technological change in agriculture—from improved germplasm and irrigation equipment to mechanisation, information and communication technologies (ICTs), and precision tools—has expanded rapidly, yet, benefits remain uneven, particularly for women. This paper maps and synthesises the evidence on women's heterogeneous adoption of agricultural technologies and the resulting welfare impacts. We integrate field-level bibliometrics with a domain-based systematic literature review (SLR), following the SPAR-4-SLR protocol and organising the findings with the TCCM (Theory–Context–Characteristics–Method) framework. Searches in Scopus and Web of Science using the query ("Agri*") AND ("Tech*") AND ("Women" OR "Gender" OR "Female"), filtered to peer-reviewed English-language articles in Social Sciences and Economics/Econometrics/Finance (1974–2025), yielded a bibliometric corpus of 1,915 records. Science-mapping (Bibliometrix/Biblioshiny; VOSviewer) profiles sources, themes, and knowledge communities. Subsequent SLR screening (ABDC A/A* journals; technology adoption + gender focus) retained 31 full-text studies for TCCM synthesis.

Bibliometric results show a Bradford-type concentration around a small core of multidisciplinary journals and thematic centrality of empowerment, extension/information, and sustainability, with rising attention to climate adaptation since 2015. Coupling reveals two knowledge communities: (i) empirics-led adoption and welfare studies and (ii) empowerment/institutions. Despite growth, the literature under-measures outcomes most salient to welfare—women's time use, wages/employment, and control over proceeds—and seldom treats local wages and prices as state variables that move with diffusion. Fewer than half of SLR articles embed analysis in economic mechanisms (opportunity cost, income–substitution trade-offs, labour-supply responses, or intra-household bargaining), limiting causal inference on who gains, who loses, and why.

We advance the Women's Heterogeneity in Adoption and Impact (W-HAI) scaffold to connect technology attributes with four interacting domains—resource endowments, role in the farm/value chain, agency/bargaining, and the local technology–institutional ecosystem—yielding five outcome channels: adoption/non-adoption, task substitution, wage/return adjustments, labour displacement/reallocation, and empowerment/disempowerment. Read through TCCM, W-HAI

specifies testable propositions and measurement priorities: elevate time use and women's wage income to primary endpoints; observe prices and wages contemporaneously; measure control with revealed markers; stratify by women's roles (manager, unpaid family, wage worker) and resource relations. The synthesis contributes a reproducible map of a fragmented field and a practical, economics-forward agenda for designing inclusive agri-technology policies that are both efficient and equitable.

TECHNICAL SESSION 3.10

Informal Non-Farm Employment and Rural Transformation in India

Diptimayee Gochhi PhD Scholar, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand
Falguni Pattanaik Associate Professor, Indian Institute of Technology, Roorkee, Uttarakhand

Rural India has witnessed profound shifts in its workforce structure over the past three decades, with non-farm employment emerging as a crucial source of livelihood diversification. This transition, however, has been accompanied by persistent challenges of job quality, informality, and regional imbalance.

Drawing on NSSO Employment–Unemployment Surveys (2000–2012) and Periodic Labour Force Survey (PLFS) rounds (2017–2024), this paper examines recent trends in rural non-farm employment (RNFE), the spatial and social patterns of transformation, and the gendered vulnerabilities embedded within these processes. Preliminary evidence suggests that the share of rural non-farm employment has nearly doubled since the 1990s, marking a structural departure from agriculture-dominated rural economies. Yet, this shift has not been accompanied by a commensurate upgrading of rural jobs. Much of the expansion is concentrated in low-skilled construction activities, petty trade, and informal services, pointing towards a "distress-driven diversification" rather than a productivity-enhancing transformation. This indicates that while RNFE has created employment opportunities, the majority of such jobs remain casual, insecure, and low-paying, thereby limiting the broader developmental potential of rural transformation. The trajectory of RNFE was further disrupted by the COVID-19 pandemic, which triggered large-scale return migration and a temporary re-agriculturalisation of the workforce. Women, in particular, bore the brunt of this disruption, with many being pushed back into subsistence farming or unpaid family labour. This highlights the fragility of rural women's position in labour markets, where barriers to education, mobility, and formal sector entry continue to perpetuate gendered labour market segmentation. Inter-state variations in RNFE growth remain striking. States such as Kerala, Punjab, and Tamil Nadu exhibit high and relatively stable shares of non-farm employment, reflecting stronger infrastructure, better human capital, and diversified economic bases. In contrast, states such as Madhya Pradesh, Chhattisgarh, and Bihar lag behind, constrained by agricultural stagnation and weak policy support for rural non-farm diversification.

To capture these dynamics, the paper applies a multinomial logit model to analyse how socioeconomic determinants such as education, caste, gender, asset ownership, and regional location influence entry into informal non-farm employment and shape the quality of work outcomes. Finally, a rural–urban comparison underscores the persistence of gaps in wages, employment quality, and formalisation between rural and urban workers. While RNFE expansion has the potential to act as a pathway out of agrarian distress, its current trajectory risks reinforcing inequality and precarity.

The paper argues for targeted policy interventions, including investments in rural infrastructure, skill development, and gender-sensitive employment programmes, to ensure that RNFE growth contributes to inclusive rural transformation rather than perpetuating informalisation and vulnerability.

To Buy or Not to Buy: E-commerce Adoption in Rural Indian Households

Vikash Vaibhav Assistant Professor, O.P. Jindal Global University, Sonipat, Haryana

Using the recently released data from India's household consumption expenditure survey (HCES-2022), we explore the penetration of Internet and e-commerce in India's rural households. This provides us with the opportunity of first of its kind of study.

A significant amount of household expenditure on mobile/Internet is testament to the importance the household attached to this new technology. It may be noted in this regard that there are no government-provided subsidies for mobile/Internet usage. Researchers have made a case for providing public Internet. Our estimates suggest that a significant proportion of rural household members have accessed the Internet (71.3%). Less than a third of these, have made any online purchase (22.7%). And as a proportion of household expenditure, the expenditure incurred on online purchases is below 1% (0.9%). We further find that the structural features of rural economy also appear to be the main impediment in digital adoption. It is possible that the already existing inequality in the social sphere is perpetuating the inequality in the digital sphere.

Overall, our results can be seen with either despair, hope, or scope. Despair, because even after about two decades of the digital revolution, the rural India maintains a large gap with urban India. The same structural features are the biggest impediments. Hope, because more than a fifth of households have started the 'digital way'. Scope, because if Internet has penetrated, and rural population have started adopting this new technology, it may be just a matter of time that goods and services that are easily available to urban India, will be reaching the rural households. Which of these manifest lies in the future. A comparison of this round with HCES-23, the next scheduled survey round, has the potential to reveal these interesting changes. An interesting study may also be undertaken addressing the gendered aspect of Internet technology.

Mixed Embeddedness and the Emergence of Taxi Driving as an Occupational Niche: A Study of Migrants in Mumbai

Shahana Purveen PhD Scholar, TISS, Mumbai, Maharashtra

This paper tries to explore the role of social networks and cultural factors in the emergence and solidification of taxi driving as an ethnic occupational niche among migrants from Uttar Pradesh (UP) despite of stigma associated with them in Mumbai. The city is known for its 'cult of violence against migrants' that came into prominence in the 1960s with the rise of Shiv Sena and its leader Bal Thackeray. In the 2000s, similar politics was played by Maharashtra Navnirman Sena and its leader Raj Thackeray against migrants from UP and Bihar (commonly called as migrants from Bhaiya land) to fit his foot in state politics. Yet, the dominance of migrants does not change in taxi occupation. Therefore, the present paper examines the factors that affect the entrance of first-generation migrants into this occupation and then after they dominate the taxi industry.

To achieve the mentioned objective, in-depth interviews and observation method have been used to collect the data from two taxi stands in Mumbai. The taxi stands were selected based on two criteria. Firstly, the size of the stand, and secondly, the number of drivers associated with the stand. For the purpose of this research, 10 in-depth interviews with primary participants and majority of them are from Benaras and Jaunpur were conducted. Data have been collected over the periods of six months in multiple phases. Further, leaders of taxi unions and officials of Regional Transport Offices were also interviewed. The data have been analysed with the help of thematic analysis.

The research reveals that mixed embeddedness or the interplay of structural factors such as blocked mobility as well as strong social networks that exist among migrants were important in the induction of new migrants into taxi driving and to overcome adverse government policies and unfavourable political environment.

Invisible Labour, Visible Data: Anganwadi Workers and the Burden of Digital Governance

Suman Sahu PhD Scholar, University of Delhi, Delhi

This paper critically examines the transformation of Aanganwadi Workers (AWWs) into "digital footsoldiers" whose labour as "data collector" and "data uploader" has been proving basis for digital governance in India. Drawing on in-depth semi-structured interviews, and participant observation conducted in Bemetara and Bilaspur (Chhattisgarh, India) between 2023–24, the study demonstrates how digital tools such as the Poshan Tracker App has converted care into surveilled, auditable data. Aanganwadi Workers, historically responsible for providing early

childhood care, nutrition, and health awareness under the Integrated Child Development Services (ICDS), now serve as the invisible "human infrastructure" sustaining digital governance systems. Findings from interviews and participant observation tells that AWWs face significant challenges while doing their digital duties, such as the lack of digital literacy, infrastructural challenges, complex app interfaces, and overburdening of tasks. Digitalisation has also intensified surveillance and control, with workers monitored through GPS, real-time dashboards, which increases anxiety among the workers. While the data are made visible in digital welfare systems, the undervalued labour that produces it, remains hidden and precarious. Thus, this paper centrally argues that AWWs are bearing a disproportionate burden in the implementation of Digital India, functioning as the crucial, yet often invisible link between state technology and communities. In addition to drawing its findings from the fieldwork conducted in Chhattisgarh, the paper also does a thorough analysis of empirical reports, policy papers, news reports, and scholarly literature.

This study centrally looks into the following questions: How has digitalisation reconfigured the everyday labour of AWWs in Chhattisgarh? In what ways does their digital work illuminate the intersection of gender, technology, and state power? This study looks at how AWWs' work is reframed by digitalisation by expansion in their job profile, excessive infrastructural and literacy challenges, and development of new patterns of surveillance and control.

Changing Labour Structure: Labour Force Dynamics in Rural India

Kailas C. Thaware Professor, Gokhale Institute of Politics & Economics, Pune, Maharashtra
Neha Dhanawade Assistant Professor, Gokhale Institute of Politics & Economics, Pune, Maharashtra

Female labour participation is a reality, and more contributions are expected, especially in rural India. Urban labour force participation rate (LFPR) growth remains modest, possibly due to slower job creation or because urban women mainly engage in household chores and caring for children, unlike rural women involved in public works and agriculture. Male LFPR is saturated because urban men are highly educated and reluctant to take low-respected jobs. Therefore, overall rate changes are driven primarily by women entering the labour force. Notably, during the pandemic period (2020-21), there was a sharp increase in rural female participation, likely because of families needing additional income, economic necessity, and return migration from cities to villages.

Rural female LFPR rose from 24.6% in 2017–18 to 47.6% in 2023–24, with a significant jump in the last year. Urban female LFPR also increased steadily from 15.9% to 28.0%, though the rise is smaller compared to rural areas. Interestingly, the recent spike (2022–23 to 2023–24) in rural female participation is the largest single-year increase in the series. Forecasting female LFPR for 2030 indicates a gradual upward trend. The linear forecast suggests LFPR will rise steadily to about 60%, while the exponential (CAGR) forecast projects a faster increase

towards approximately 76%. The latter may be overly optimistic and less realistic, considering potential saturation effects. A more realistic estimate would likely be between 60–65% by 2030.

Based on historical data (2017–2023), the rural female LFPR forecast for 2030 shows a steady increase towards about 60%. Regression analysis confirms this upward trend, with both models indicating a statistically significant rise in rural female LFPR since 2017. A structural break around 2020, probably due to COVID-19 shocks, male migration, and rural employment schemes like MGNREGA and self-help groups (SHGs), suggests progress. By 2030, rural female LFPR could reach approximately 66% (linear forecast), which is optimistic but plausible. Log-linear analysis indicates a growth potential of about 90%, but this may overestimate reality due to social constraints.

These findings imply policy considerations, as most of this growth appears distress-driven—women entering the labour force because of household financial pressures—highlighting the importance of work quality alongside participation. In summary, female LFPR is increasing faster than male LFPR, especially in rural areas. If current trends continue, rural female LFPR could potentially catch up with rural male LFPR within a decade.

Dynamics of Women Work in India: Recent Trends from Time Use Survey

Udai Bhan Singh Associate Professor, Banaras Hindu University, Varanasi, Uttar Pradesh

The dynamics of women's work in India are undergoing a gradual transformation, prompted by policy shifts and social change, yet they remain constrained by pervasive gender norms and structural barriers. Traditional labour statistics have systematically underestimated Indian women's economic contribution by neglecting the spectrum of unpaid and care work that upholds families and sustains the economy. Leveraging recent rounds of the National Time Use Survey (2019 and 2024), this paper examines how Indian women allocate time across paid work, unpaid domestic chores, and caregiving — activities often overlooked by conventional surveys. Findings reveal a modest increase in women's paid employment participation (from 21.8% to 25.0% among women aged 15–59 years), paralleled by small declines in daily time devoted to unpaid household and care activities. Simultaneously, the time spent on unpaid care and domestic work remains stubbornly high, suggesting that higher measured participation does not always translate to a corresponding reduction in unpaid workload. In terms of intensity, women's average daily unpaid domestic work dropped slightly from 291 minutes to 280 minutes; for men, it dipped from 94 minutes to 87 minutes. This could signal marginal gains in efficiency, sharing, or access to infrastructure that lightens domestic burdens, but the ratio remains starkly unequal.

Economic shocks, such as the COVID-19 pandemic, have also played a role in reshaping both the demand for women's labour and the contours of unpaid work. Caregiving, in particular, remains central: 41.0% of women engage in care activities (compared to 21.4%

of men), spending nearly double the time on such tasks. This not only perpetuates gender disparities in leisure and self-care, but also limits women's time and energy for skill training, political participation, or personal pursuits. The analysis highlights persistent obstacles, including diffused social norms, limited formal job access, inadequate support structures, and the dominance of informal work. The paper argues that Time Use Surveys provide a vital, nuanced lens for analysing these complex realities, calling for integrated policy approaches to recognise, reduce, and redistribute unpaid work.

Between Empowerment and Distress: Gendered Pathways from Farm to Non-Farm Livelihoods in Rural Java

Mario Valentinus Poluakan PhD Scholar, Indian Institute of Technology, North Guwahati, Assam

Rajshree Bedamatta Professor, Indian Institute of Technology, Guwahati, Assam

Amarjyoti Mahanta Associate Professor, Indian Institute of Technology, Guwahati, Assam

Rural Java in Indonesia is undergoing deep and widespread transformations, marked by the paradoxical coexistence of persistent smallholder agriculture and rapid non-farm diversification. This agrarian transition is reshaping livelihoods, household structures, and gender relationships. One of its prevailing characteristics is male out-migration for labour, which has resulted in a substantial proportion of de facto female-headed households – women who often manage agricultural land, children, and often new non-farm enterprises. In this context, a key question emerges: as households navigate this transition, do men and women access the same pathways out of poverty, and are their abilities rewarded equally?

Existing literature portrays this transition as a binary driven by the "pull" of higher urban wages or the "push" of agricultural distress, largely overlooking the intra-household dynamics and gendered power structures that shape such movements. Demographic trends – such as the rise in women's educational attainment and the growing number of women who own land — have been noted; however, causal relationships between these wealth-generating assets and welfare outcomes remain poorly understood.

This study examines the gendered causal pathways of success or failure in livelihoods. The central question is: to what extent do distress and empowerment differentially shape men's and women's occupational choices and welfare outcomes within rural Javanese households? We employed a mixed-methods research design based on a survey of 811 individuals in 250 households across West, Central, and East Java. Households with migration experience were purposively sampled to capture evolving livelihood strategies. Two composite indices were constructed: an Empowerment Index, encompassing decision-making authority, educational attainment, and access to credit, and a Distress Index, capturing landlessness and poor housing quality. We used a Multi-Group Structural Equation Model (MGA-SEM) to test and compare the strength of pathways linking empowerment and distress to welfare outcomes for

male-headed and female-headed households, explicitly controlling for income as a mediating factor.

The results reveal a strong narrative of dual and gendered livelihood pathways. There is a stark discrepancy in returns to empowerment. For male-headed households, the Empowerment Index, shows a strong, statistically significant, and positive association with household income. In contrast, for female-headed households, the same index has no statistically significant impact. This null result is revealing: the skills, education, and managerial authority women possess are systematically marginalised and fail to yield financial benefits. The pipeline of empowerment functions effectively for men, but for women it is "leaky." Conversely, the Distress Index indicates a universal constraint. Landlessness and poor housing exert a strong, negative, and significant effect on income for both male-headed and female-headed households. This highlights material deprivation as a fundamental barrier trapping households in low-earning livelihoods, regardless of gender. The Oaxaca-Blinder decomposition further underscores the structural nature of this inequality. It shows that differences in endowments explained only about 11% of the welfare gap, while the overwhelming share lies in the "unexplained" component – reflecting differential returns to assets and structural discrimination. These findings reinforce the SEM results: the system rewards economic assets differently by gender. We argue that the agrarian transition in Java is not gender-neutral. There exists a dual-driver framework – an empowerment pathway that remains ineffective for women, and a distress pathway that universally constrains households.

The findings can have policy implications. "Empowerment" programmes that are exclusively devoted to education or microcredit are insufficient. The fundamental obstacle is not a lack of capacity but an institutional framework that prevents from translating their capacities into income. Policies must be re-oriented to dismantle market, institutional, and social barriers that restrict women's economic returns. In parallel, robust social protection for asset-poor households is essential to address the universal dimension of distress.

Assessing the Impact of Migration on Household Livelihoods: Evidence from Rural Bihar Using a Difference-in-Differences Approach

Puja Kumari PhD Scholar, Central University of South Bihar, Gaya, Bihar

This study investigates the impact of migration on household livelihood transformation in Bihar, a state characterised by limited industrial development, rapid population growth, unequal land distribution, low agricultural productivity, and widespread poverty. These structural constraints have resulted in significant outmigration, particularly among low-skilled and semi-skilled workers, who seek improved economic opportunities in other regions of India. Understanding the multidimensional effects of migration on household welfare is essential for both academic inquiry and policy formulation.

Using primary data collected from 500 households, comprising both migrant and non-migrant families, this study employs a Difference-in-Differences (DiD) approach to estimate the causal impact of migration on livelihood outcomes. The DiD methodology allows for the comparison of pre- and post-migration changes while controlling for unobserved heterogeneity between migrant and non-migrant households. Livelihood outcomes are measured across multiple dimensions, including income, employment quality, housing conditions, educational attainment, and asset ownership.

The empirical results reveal that migration has a statistically significant positive effect on household livelihoods. Among the dimensions analysed, income, employment quality, and asset accumulation experienced the most pronounced improvements, suggesting that migration provides households with enhanced financial resources, better employment opportunities, and the ability to invest in productive assets. Housing and educational outcomes also improved, though at a relatively modest pace, indicating that some aspects of household welfare require longer-term interventions. The composite livelihood index confirms that migrant households experienced substantial gains in overall well-being relative to non-migrant households, highlighting the transformative potential of migration as a livelihood strategy.

These findings underscore migration's role in promoting economic security, social mobility, and multidimensional welfare improvement for rural households in Bihar. The study contributes to the broader migration and development discourse by demonstrating the significant causal effects of migration on livelihoods and emphasises the importance of policy interventions aimed at sustaining these gains. Supportive measures, such as skill development programmes, financial literacy initiatives, and social safety nets, can enhance the long-term benefits of migration for both households and the regional economy.

Bibliometric Review of Relationship between Gig Worker and Social Security Grounded in Scopus and Web of Science: Research Hotspots and Trends

Sudhir Chandra Das Professor, Banaras Hindu University, Varanasi, Uttar Pradesh

Saurav Kant PhD Scholar, Banaras Hindu University, Varanasi, Uttar Pradesh

This bibliometric overview charts the intellectual landscape at the intersection of social security and gig work, synthesising 266 peer-reviewed articles from 2002 to 2024 from Scopus and Web of Science. After PRISMA-directed screening and de-duplication, Bibliometrix/Biblioshiny analysis quantified research productivity and visualised science mapping architecture.

The field of work has increased dramatically since 2019 (APGR ≈ 15.4%), reflecting increased pandemic-related concern with precarious work and welfare protection. Overall, documents average 13.26 citations and 5.24 years of age, with authorship shared between

646 researchers (2.67 co-authors per article; 7.52% international co-authorship). Lotka's law is highly skewed; 92.9% of the authors only produce one paper, reflecting a fragmented research domain. Top journals are the International Social Security Review (19 articles, h-index = 6), European Journal of Social Security, and International Labour Review. Among single-author Schoukens (6 papers; 111 citations) is the most productive, while Graham's limited corpus draws a strong influence (552 citations on 4 papers). Friedman (2014) and Wood et al. (2018; 2019) are the most cited, and serve as reference points for conversations about platform governance, autonomy, and algorithmic control.

Geographically, output is dominated by high-income nations, the United States of America (US) tops total publications (43), and corresponding-author analysis also places the United Kingdom (UK) at number one (28; MCP 7.1%), followed by the US (21; MCP 14.3%) and Belgium (17; MCP 11.8%) in evidence of modest but unbalanced international collaboration.

Keyword analysis produces "social security", "employment", "gig economy", "social protection", and "platform workers" as the conceptual nucleus. Thematic mapping locates "social security/employment/platform work" as motor themes with high centrality and density, "gig economy/social protection/labour rights/self-employed" as underlying themes, "industrial relations/entrepreneurship" as niche themes, and "independent workers/financial literacy/cross-border platform work" as emerging or receding fields.

Trend-topic analysis reveals an explicit thematic change from pre-2018 topics (occupational accidents, migration, temporary work) to post-2018 concern with digital labour, unemployment insurance, and, most recently (2022-2024), "gig economy", "digital platforms", and "gig workers."

In practice, the review highlights the importance of broadening empirical scope beyond high-income settings to enhance generalisability, of building portable and contributory-agnostic protection mechanisms that accompany workers through tasks, and of enhancing transparency in algorithmic management to stabilise earnings and benefit eligibility. It is calling for inter-disciplinary, cross-national collaborations across law, economics, policy, and occupational health to close conceptual discussions with implementable social protection frameworks, especially for under-studied non-platform gig segments. The field is at a productive but fragmented stage, and comparative and policy-driven research is needed to translate thematic consensus into operational welfare architectures.

Workshop Sessions

WORKSHOP SESSION 1

Education and Skill Challenges in the Alang Ship Recycling Industry

Hrudanand Gunanidhi Misra Professor, Nirma University, Ahmedabad, Gujarat
Nikunj Patel Associate Professor, Nirma University, Ahmedabad, Gujarat

The Alang Ship Recycling Yard, situated along the coast of Gujarat, India, is one of the largest ship-breaking facilities in the world. It has garnered global attention for its scale, economic contribution, and complex socio-environmental dynamics. At the heart of this industry lies a large and diverse workforce, primarily composed of migrant labourers from economically disadvantaged regions such as Uttar Pradesh, Bihar, Odisha, Jharkhand, and West Bengal. These workers form the backbone of the industry, undertaking arduous and hazardous tasks with limited institutional support in terms of education, skill development, and long-term career progression. The industry operates in a highly informal and fragmented manner, with a significant portion of its labour force employed on a contractual or daily-wage basis. The majority of workers possess low levels of formal education, often having discontinued schooling at the primary or secondary level due to economic constraints. This educational deprivation constrains their capacity to engage with formal training programmes, safety procedures, or upskilling opportunities. Moreover, the lack of functional literacy and numeracy impacts not only their employability beyond the ship-breaking sector but also their ability to advocate for their rights and navigate the complexities of social security schemes, legal protections, or medical care.

Skill challenges in Alang are deeply embedded in the nature of the work itself, which includes dismantling steel structures, handling hazardous materials such as asbestos and residual oils, and operating heavy machinery. While these tasks demand significant technical competence and adherence to safety protocols, the training infrastructure in and around Alang remains inadequate. Most workers acquire skills through informal, on-the-job learning, which is neither standardised nor certified. This informal skilling leads to inconsistencies in safety practices and limits the mobility of workers across industries or geographies. The absence of a systematic skill recognition framework further isolates these workers from broader labour market opportunities.

The educational and skill gaps also have a generational dimension. Many workers have migrated with their families, and children often face barriers to accessing quality education

due to language differences, inadequate infrastructure, and social exclusion. Inadequate educational access perpetuates intergenerational cycles of poverty and occupational immobility, with younger generations likely to follow their parents into informal and precarious labour. Educational interventions at the community level remain sporadic and are typically led by non-governmental organisations (NGOs) or civil society organisations (CSOs) with limited reach and sustainability.

This paper explores the multifaceted challenges related to education and skill acquisition among workers in the Alang Ship Recycling Industry, highlighting structural inadequacies, policy gaps, and potential avenues for reform.

Psychological Safety in Higher Education Institutions

Aditi Mathur Assistant Professor, Institute of Agri Business Management, Bikaner, Rajasthan

In the rapidly evolving landscape of higher education, psychological safety has emerged as a vital pillar for promoting effective learning, innovation, and well-being. Coined by Harvard professor Amy Edmondson, psychological safety refers to an environment where individuals feel secure to express ideas, ask questions, and admit mistakes without fear of humiliation or punishment. Though originally emphasised in corporate contexts, its relevance in higher education is increasingly recognised. Psychological safety enhances student engagement and critical thinking by creating a space where learners feel free to voice their opinions, explore diverse perspectives, and challenge prevailing ideas. In such environments, students are more likely to take intellectual risks, which is crucial for deep learning and academic growth. Conversely, fear of negative judgement stifles curiosity, limits participation, and hampers intellectual development.

Beyond the classroom, psychological safety fosters innovation and research by enabling open dialogue and collaborative problem-solving. Faculty and students engaged in research must feel comfortable admitting knowledge gaps, proposing novel ideas, and constructively critiquing each other's work. A psychologically unsafe climate can inhibit these processes, thereby diminishing the potential for academic breakthroughs. Furthermore, psychological safety supports mental health and well-being—a growing concern in higher education. Academic pressure, social isolation, and fear of failure contribute to rising levels of anxiety and depression among students. Environments that encourage open communication and treat mistakes as learning opportunities foster resilience and self-efficacy, benefiting both students and faculty. However, implementing psychological safety in academia presents several challenges. Hierarchical structures, cultural and social norms, and competitive academic climates can undermine openness and inclusion. Rigid faculty-student dynamics, the fear of academic penalties, and systemic inequalities further hinder the establishment of psychologically safe spaces.

Addressing these challenges requires strategic interventions at multiple levels. At the instructor level, faculty can model vulnerability, use inclusive teaching methods, and provide constructive feedback. Curricular reforms—such as incorporating formative assessments, peer evaluations, and transparent grading—can reduce anxiety and promote fairness. Institutional leadership also plays a critical role by endorsing diversity, equity, and mental health initiatives, establishing clear reporting channels, and actively seeking feedback from all stakeholders. Empirical research supports the significance of psychological safety in education. Studies reveal that students who experience higher psychological safety demonstrate greater engagement, resilience, and satisfaction. Institutions such as Stanford University and the University of Michigan have reported improved outcomes after implementing inclusive, student-centred pedagogies.

In conclusion, psychological safety is not a peripheral concern but a foundational element of a thriving academic environment. It empowers students and faculty to engage deeply, think critically, and innovate fearlessly. By prioritising psychological safety, higher education institutions can build resilient, inclusive, and forward-thinking communities equipped to tackle the complexities of the modern world.

Role of Micro, Small and Medium Enterprises in India's Economic Transformation: An Analysis of Growth Trends, Employment Patterns, and Empirical Evidence

Anu Kumari PhD Scholar, Central University of South Bihar, Gaya, Bihar

Micro, small and medium enterprises (MSMEs) serve as a vital engine for India's economic development, playing a crucial role in generating employment, fostering industrialisation, and enhancing export performance.

This study investigates growth pattern and macroeconomic relevance of MSMEs in India over the period from 1995-96 to 2019-20. The primary aim of this research is to analyse how the expansion of MSMEs has affected employment levels and overall gross domestic product (GDP) in India. Using secondary data obtained from Ministry of MSME, National Sample Survey Office (NSSO), and annual economic surveys, the study utilises Ordinary Least Squares (OLS) regression analysis to examine the relationship between MSMEs development and key economic indicators.

The empirical analysis indicates a strong and statistically significant association between MSMEs growth and employment generation, reaffirming the sector's potential to address structural challenges of the Indian economy. The study also identifies key challenges that limit the sector's full potential—such as restricted access to finance, infrastructural gaps, complex regulatory compliance, and limited technological integration. To address these issues, it recommends a forward looking policy framework focused on fostering innovation, promoting

digital transformation, and enhancing market access. Strategic collaboration between government bodies, financial institutions, and private stakeholders.

To address these issues, the study provides forward looking policy approach aimed at fostering innovation, enabling digital transformation, and improving market accessibility for MSMEs. Strategic collaboration among government agencies, financial institutions, and private stakeholders will be critical to enhancing competitiveness and productivity of the sector. Additionally, the study emphasises the need for reliable data systems, targeted skill development programmes, and region-specific policy interventions to support MSMEs in diverse economic settings. The findings show the importance of unlocking latent potential of MSMEs not only for accelerating economic recovery in post-pandemic context but also for achieving India's long-term development goals.

Gig Workers of Platform Global Value System in Maharashtra

Sachin Jamdade PhD Scholar, Jawaharlal Nehru University, New Delhi

The global value system divides production by design, marketing, manufacturing, and branding. The role of algorithmic platforms in the age of digital capitalism is mainly incorporated into the circulation of capital to capital, particularly in the form of a fictitious commodity. However, multinational corporations outperformed their national rivals. The global value system consists of an independent firm with contracted distribution. It has developed through highly uneven power relations and the disintegration of ownership. The relative numbers of buyers and sellers in a segmented market shape relative bargaining power within the value system. The algorithmic platform economy constitutes most of the informal workforce. The driving force of the platform economy is technology and data. The regulations that empower enterprises and impose access to data have been underscored. The value system comprises vendors, traders, and sellers to connect producers directly with consumers. The data generated are to be controlled, and they are extensively used for producing surplus value. The user of the services adds value to the data. The value added to the data is information that needs security. The electronic apps, equipment, and devices collectively become means of production, which form relations of distribution. This means of production is deployed to associate the abstract labour with the users. Data transmission involves storage and dissemination that need to be regulated by an accountable social institution, other than the state.

The study focuses on the social upgrading of workers, which includes measures such as employment and wages, measurable standards and enabling rights. In contrast, economic upgrading looks at the product, process, and functional systems. The research has to find out the vertical and horizontal relations of labour indicators within the global value system. Also, how the global value system governs and shapes wages, skills, training and employment relations in the labour market.

The paper discusses the working conditions of labour in the Indian platform economy. The research methodology used ss a qualitative one, encompassing secondary review and key informant interviews with gig workers. A structured questionnaire, including some closed-ended and open-ended questions based on the objective, were used purposely to collect primary information from platform work.

Health Sequelae, Occupational Downgrading, and Financial Hardship: The Lived Experience among Informal Sector Victims of Road Traffic Crashes

Sunitha Vijayan Scientist B, KSCSTE-National Transportation Planning and Research Centre (NATPAC), Thiruvananthapuram, Kerala

Christabell P. J. Associate Professor, University of Kerala, Thiruvananthapuram, Kerala

Madhu Errampalli Chief Scientist, Central Road Research Institute (CRRI), Council of Scientific and Industrial Research (CSIR), New Delhi

Vishnu P. S. Assistant Professor, Velu Thampi Memorial Nair Service Society College, University of Kerala, Thiruvananthapuram, Kerala

Road traffic crashes (RTCs) represent a predominant global public health challenge, and a prime share of road accident catastrophes occurs in low and middle-income countries that own a minor vehicle population but bear monumental post-crash atrocities. However, the marginalised informal sector workers are the most disproportionately impacted victims of RTCs, where the succeeding socioeconomic impact drives these victims into indebtedness and impoverishment. The present study aims to critically assess the extent to which RTCs compound the vulnerability of informal workers, specifically analysing its profound impact on their health outcomes, occupational sustainability, and financial well-being, through a mixed-methods approach. An analysis in this front intends to capture the nuances of the lived experience of informal workers sustaining unforeseen RTC atrocities, exacerbating their vulnerability and distress.

The research is fostered in a multi-theoretical framework interweaving the notions of Human Capital Theory (HCT) and the Social Determinants of Health (SDOH) framework. The study adopts a mixed-methods framework integrating both quantitative and qualitative data analysis. The quantitative analysis was performed on the data extracted from 425 Motor Accidents Claims Tribunal (MACT) judgement orders. The selection criteria were that the occupation of the claimants fell into the category of informal workers, which included self-employed, informal skilled workers, and daily wage labourers. Subsequently, the qualitative research utilising thematic analysis was performed through purposive sampling and semi-structured in-depth interviews conducted among 14 informal worker RTC victims in the Thiruvananthapuram District of Kerala.

The quantitative analysis revealed the highest concentration of victims within the working age group, with a significant proportion sustaining severe injuries (33%). Furthermore, the predominance of two-wheelers (53%) among the RTC-involved vehicles, with a substantial proportion of victims comprising Vulnerable Road Users (77%) was evident. The disability level, medical and non-medical costs, and lost workdays due to inpatient treatment and recovery is found to be directly proportional to the injury severity sustained, thus revealing the extent of health and economic burden suffered by the informal worker victims. Further, the qualitative assessment emerged with the resultant interlinkages between three themes identified as: Health Sequelae, Occupational Downgrading, and Financial Hardship. The results thus reflect the precarious situation of informal workers with long-term health morbidities, work disability and economic burden sustained from the RTCs.

The findings stress the necessity of government intervention in providing targeted policies for the rehabilitation of informal worker RTC victims and their reintegration into the economy. Addressing the lack of social security measures, promoting a transition to safer modes of transport, implementing long-term rehabilitation measures, strengthening universal health insurance systems, ensuring faster third-party claim settlement at MACT courts, and providing substantive financial assistance for medical treatment through government schemes would constitute significant steps toward enhancing the quality of life of victims and fostering positive recovery.

Remote Work and Urban Women's Experience: Exploring Work-Life Balance and Job Satisfaction in Mumbai's Tech Sector

Wajida Irfan Shaikh PhD Scholar, Shreemati Nathibai Damodar Thackersey Women's University, Mumbai, Maharashtra

The COVID-19 pandemic catalysed a major shift in how work is organised across sectors across the world, accelerating the normalisation of remote and hybrid work arrangements. In India's urban tech sector, remote work emerged as a solution to health and mobility crises but its gendered implications remain underexplored. For women in tech, remote work brought flexibility but also heightened the complexity of balancing professional demands with domestic responsibilities. This paper investigates the experiences of urban women professionals in Mumbai's technology sector, examining how remote work affects their work-life balance and job satisfaction.

Based on primary survey data from 150 women working in remote or hybrid roles, the study uses descriptive and qualitative analysis to assess key dimensions of their work experience. The survey captures descriptive insights across six domains: work-life balance, job satisfaction, technological support, communication quality, employee engagement, and attitudes toward remote work. Demographic variables such as age, marital status, and job roles are also considered to understand the diversity within the female workforce.

Preliminary results suggest that while most respondents appreciate the autonomy offered by remote work, this flexibility often coexists with role conflict and psychological fatigue. Caregivers, in particular, report significantly lower work-life balance and satisfaction levels. Job satisfaction is found to be strongly influenced by technological reliability and communication clarity; more so than by the flexibility of the work mode itself. The findings also highlight how remote work reshapes career visibility, team cohesion, and emotional well-being for women in tech roles.

This paper contributes to growing scholarship on gender and digital labour by providing empirical evidence from India's tech capital. It recommends gender-sensitive remote work policies, enhanced digital infrastructure, and more inclusive workplace communication strategies to support sustainable employment for women in the post-pandemic digital economy. As India builds its digital future, equity must be coded into every click.

From Hustle to Hardship: Examining the Legal Blindspot Leading to the Labour Precarity in Platform Work

Francis Ajay PhD Scholar, Christ University, Bengaluru, Karnataka
Aneesh M R Assistant Professor, Christ University, Bengaluru, Karnataka

The rapid expansion of gig economy in India has significantly reshaped the traditional labour market, offering flexibility and autonomy to workers, which often comes at the cost of stability while being exposed to income insecurity and socioeconomic vulnerability. This study analyses the labour market precarity faced by the platform based gig workers, with a specific focus on how these socioeconomic conditions shape their vulnerabilities. Their dependence on platform algorithms for job allocation and evaluation also introduces new forms of control, constraining worker despite the appearance of independence. Using quantitative data, the research explores how the absence of job security lead to income volatility, the lack of social protection, and algorithmic control, enhancing the risks faced by gig workers across urban labour markets. Assessing the vulnerabilities, the study also investigates the extent of legal protection given to gig worker under existing labour law in India, interrogating the effectiveness of policy measure, and other regulatory frameworks intended to incorporate gig workers into the formal legal structure. The research also assesses the levels of legal awareness among gig workers, revealing a significant gap between formal entitlements of the workers' understanding and the inability to access basic labour rights. This is due to the legal gap in employee-employer relation and the classification of gig workers as "independent contractors," which further marginalises them from mainstream labour rights. By integrating the perspectives of economic insecurity with an analysis of legal consciousness, this study contributes to broader debate on labour market precarity and the in-formalisation of work in the digital economy. The findings from the study suggest an inclusive policy framework that not only recognises the structural vulnerabilities of gig workers but also enhances their legal

literacy and regulatory justice. In doing so, the research calls for a re-conceptualisation of labour protections that accounts for the realising of the platform-mediated employment in India's evolving labour landscape.

Migrant Labour in South India: Assessing Training, Wages, Well-being, and Employment Security in the Construction Sector of Chennai

Paramasivam P. Assistant Professor, Takshashila University, Tindivanam, Tamil Nadu

In the 21st century, migrant workers are playing a vital role around the world. Especially construction migrant workers in Asian countries such as Malaysia and Singapore, where there is a high labour shortage for construction workers. Tamil Nadu is a labour-intensive state, but wages paid to local construction workers are high, and working hours are low. This is the main reason builders and contractors prefer construction workers from other states of India. Due to the backwardness of migrant construction workers family situation, workers are compelled to search for jobs in other states. Workers are looking for jobs, but they are not considering minimum wages and working hours in the construction sector. The State Planning Commission of Tamil Nadu conducted a study with 811 respondents. The report revealed that majority of the migrant workers into the Chennai region are from the eastern and north-eastern region of India, in particular, from the states of Bihar, Odisha, and Assam. They mostly belong to the most backward sections of the society: 29.0% belong to the Scheduled Tribes (STs), 24.0% belong to the Scheduled Castes (SCs), and 38.0% are from Other Backward Classes (OBCs). The educational status of the majority of migrant workers is high school or below. The migrant workers are not very young and their average age is 32 years, and two-thirds of them are married. They are also not considering accommodation, food, and sanitation.

To look into this, the study was conducted to assess training, wages, well-being, and employment security in the construction sector of Chennai. The study adopted both primary and secondary data. The study found that the majority of construction workers migrated from Bihar to Chennai. A majority, that is, 53.0% of the respondents, had no formal education in the study area. The remaining 45.8% of the respondents studied up to primary education, and 1.2%—that is, one respondent alone—studied up to secondary education in the study area. It is noted from the respondents that there is no accessibility to schools in their native place, and they inferred that poverty is the main reason for not being able to access education. The study also recommended suitable policy measures to the government.

Has Mahatma Gandhi National Rural Employment Guarantee Programme Helped Poor Households?

Harsha Tiwary Assistant Professor, Amity University Kolkata, Kolkata, West Bengal

Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGP) is supposed to be exceptional because it revamps past employment-generating programmes and mandates an ambitious, demand-driven employment programme. The programme aims to benefit the rural poor with guaranteed income by assuring 100 days per year at a socially acceptable wage, improving agricultural productivity, and alleviating land degradation. This paper seeks to shed light on the overall performance of MGNREGP to know to what extent the benefits (person-days generated, number of households employed) of the programme have been percolated across states and rural districts, and to capture the impacts of different probable determinants on the performance of the programme.

The performance of MGNREGP is evaluated across 27 Indian states and 428 rural districts over the years 2011-2021 through secondary data analysis collected from different websites and other sources. The three performance indicators of MGNREGP are: the spread of MGNREGP, depth of MGNREGP, and the ratio of job supply to potential demand of the jobs under MGNREGP. Different tables, bar diagrams, paired-t tests, and mean difference tests were done for exploratory data analysis. Panel regressions were done to study the impact of the independent variables on the performance of the MGNREGP.

Employment under MGNREGP has increased over the years but it is far from its target of guaranteed 100 days of employment. All the performance indicators of MGNREGP were explained negatively significantly by the rural information index. The awareness and information of people do not play any role in capturing MGNREGP work. Furthermore, all three performance indicators of MGNREGP were notably influenced by MGNREGP expenditure; this is a significant result, given that many governmental development programmes suffer from massive fund leakage. Self-targeting for getting adequate jobs is playing a vital role in the good performance of MGNREGP. The very nature of the programme has changed; it has become supply-driven instead of demand-driven.

Labour Migration and Debt Trap: Evidence from Punjabi Families in COVID-19

Atinder Pal Kaur Assistant Professor, Punjab Agricultural University, Ludhiana, Punjab

Bhupesh Gopal Chintamani Assistant Professor, Symbiosis International University, Pune, Maharashtra

The COVID-19 pandemic has raised an alarming situation — an enormous shortage of finances among the migrants and their respective families due to work restrictions. Moreover, it has restricted mobility which has caused heavy job loss worldwide. Therefore, the present study analyses not only the repercussions of the pandemic on immigrants and mitigation strategies of the families but also the role of government in this situation. Data were collected from 200 (international) migrant families in rural Punjab with the assistance of a semi-structured interview schedule. In a theoretical sense, an ethnographic approach includes the nature of migration, place of migration, network relations, years of migration, and occupation of the migrants. In addition, the narrative approach is also used to understand and analyse channels of migration, return migration, and various typologies of debts.

The study found return migration and an increase in debts that were taken from different sources. This situation has created a web of debts in the migrant families and two-fold debts were born. Firstly, to meet the basic requirements of the families and secondly, to support the migrants either during their return migration or providing them help in the host countries.

The study also found return migration in landless and marginal farmers, especially labour migrants. After return, migrants started working as labourers in the domestic markets because of the non-availability of other jobs in their hands. In the worst cases, some left-behind families to work as local labourer, such as daily wage labour with masons and under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), to fulfil their basic requirements.

Results also depict a lacuna in government intervention in providing financial assistance to the return migrants and families. Government aid in terms of only some basic food items such as rice, flour, and oil were provided to handle the situation. However, that was insufficient because other necessities such as children's education expenditure, electricity bills, milk consumption, health facilities, and even migrants' conditions remained neglected. Therefore, there is a need to strengthen the social security net and self-help groups so that migrant families can survive during such a crisis.

International Remittances and Household Spending Patterns in India: From the Perspective of Socioeconomic Communities

Pralay Saha PhD Scholar, University of Kalyani, Nadia, West Bengal

This study examines the impact of international remittances on household expenditure patterns across religious groups in India, drawing on detailed unit-level data from the 64th Round of the National Sample Survey Office (NSSO). Recognising the growing importance of remittances as a stable source of household income, the analysis considers five major expenditure categories: food, health, education, consumer durables, and other forms of consumption. To address both continuous and censored spending behaviours, Ordinary Least Squares (OLS) and Tobit regression models are employed, with non-migrant households serving as the baseline reference group.

The findings indicate that international remittances significantly increase household spending in all categories, although the magnitude of the effect varies across religious groups. "Others-Migrant" households exhibit the largest gains, followed by Hindu migrant and Muslim migrant households. Notably, higher expenditures on education and consumer durables suggest that remittances are used not only to meet immediate consumption needs but also to support long-term investments in human capital formation and asset accumulation. Socioeconomic characteristics are also significant determinants of expenditure patterns. Households with larger holdings, greater household size, and better-educated heads spend more, reflecting both enhanced resource availability and informed decision-making. In contrast, poverty exerts a substantial negative effect on spending, highlighting the constraints faced by low-income households in allocating resources to essential and discretionary items. The analysis further reveals that female-headed households consistently spend less than their male-headed counterparts, despite evidence from prior research suggesting women may prioritise education and health when controlling household resources. This disparity underscores the influence of structural inequalities, limited income access, and social barriers in constraining the expenditure capacity of female-headed households.

Overall, the study highlights the role of remittances in enhancing household welfare, while drawing attention to persistent socioeconomic and demographic disparities. The results point to the need for targeted policy interventions to maximise the developmental potential of remittances and mitigate structural inequalities.

Expansion of Higher Education in India: Growth, Access, and Quality Challenges

Shravan MK Research Associate, Centre for Sustainable Employment (CSE), Azim Premji University, Bengaluru, Karnataka

India's higher education system has grown rapidly since the mid-1980s, shaped by government reforms and rising private sector participation. Education, as a concurrent subject, has seen coordinated policy action with milestones such as the National Policy on Education (1986) and the Programme of Action (1992) encouraging both public and private growth.

Data from the All India Survey on Higher Education (AISHE) shows that the number of higher education institutions (HEIs) such as universities, colleges, and standalone institutions has expanded nearly 40 times since the 1950s. Growth accelerated significantly from the late 1980s and reached a peak in 2008 with private institutions accounting for most of the increase. By 2022, they represented 79% of all HEIs compared to 49% in 1980 while public institution growth slowed. The Eleventh Five Year Plan (2007–2012) further boosted capacity, teacher recruitment, and student enrolments.

Our analysis indicates that this expansion has been uneven. College density, defined as the number of colleges per lakh youth aged 20–24 years, is much higher in states such as Karnataka and Andhra Pradesh but remains low in Bihar and Jharkhand. The gross enrolment ratio (GER) rose from 17% for men and 14% for women in 2011 to 27% and 29% respectively in 2022, moving towards the National Education Policy (NEP) 2020 target of 50% by 2035. Quality challenges remain significant. Student–teacher ratios fall well below prescribed norms with faculty growth is failing to keep pace with enrolments. Regression analysis using AISHE data shows that an increase of 100 students results in less than one additional teacher, far below the ideal of 5.0 to 6.7. Public colleges have nearly twice the number of students per teacher compared to private institutions and regional disparities persist, with southern states performing better than those in the north. While access has expanded substantially, equitable distribution and sufficient faculty recruitment remain critical priorities for India's higher education system.

Gendered Dynamics of Labour Force Participation in India and the Impact of MGNREGA on Female Labour Force Participation in the Context of an Increasing Economic Growth

Anna K Jacob Project Manager, Central Square Foundation, New Delhi

This study explores the gendered dynamics of labour in India by examining the disconnect between India's economic growth and female labour force participation, evaluates the role of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in shaping women's

labour market outcomes, and analyses gender disparities in employment.

India witnesses a stagnant female labour force participation rate (FLFPR), noting a 23% decline despite rapid economic development, structural changes, and increased education levels over the 25-30 years. While studying the pre and post COVID-19 scenarios, the recent statistics underscore the disproportionate impact of the crisis on younger cohorts, particularly women, especially in the rural landscape —as per Periodic Labour Force Survey (PLFS) data, in rural areas, nearly 27% of young men and as many as 58% of young women reported no recovery, compared to only 3% of older men and 33% of older women. These figures highlight the deeply gendered nature of post-crisis employment vulnerabilities. Factors like discriminating social norms that include gender-wage discrimination etc., a lack of proper childcare facilities at workplace, a lack of security and safety measure at workplace, helpless need for migration due to non-availability of works near their homes, delayed wage payments etc., are some of the crucial factors that attribute towards the stagnant rates of FLFPR in India.

The findings of this study provide evidence of these, underlining the need for policies that focus more on development and employment initiatives that also take care and mitigate such factors that obstruct women from participating in the labour force. The focus should thus, be on proper and fuller implementation of more gender-responsive schemes such as the MGNREGA, along with infrastructural and organisational developments to ensure that the women come out of their homes and accrue the benefits provided by the available job opportunities. The findings suggest that growth alone is insufficient to increase women's economic activity, emphasising that growth dynamics matter for policy design to improve women's labour force participation rate so that India can take complete advantage of its demographic dividend.

Socioeconomic Conditions of Housekeeping Workers in Organised Private Sectors in Coimbatore

Sankar Rao Chirala Associate Professor, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

Bhanurekha S Master's Student, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

This study examines the socioeconomic conditions of housekeeping workers in organised private sectors in Coimbatore, Tamil Nadu, India. Based on a filed survey of 100 workers, selected based on simple random sampling, the basic statistics and tabulation methods are used to analyse the data. The analysis is made across three categories of works such as permanent, temporary, and outsourced. The results show that a significant gender wage gap is evident, with male workers earning a much higher average income than female workers. The data also suggest that a higher education level does not lead to a higher salary in this type of work, as many of the highest earners have no formal education. The study highlights a divided employment structure among housekeeping workers, with clear differences in working conditions and financial well-being.

While permanent staff usually have better job security and more access to benefits, a significant number still face financial difficulties. Temporary and outsourced workers, in particular, deal with greater financial instability, fewer benefits, and lower job retention, even though they often feel respected by their peers and supervisors. And among the respondents, no one was aware of the welfare schemes provided by the government for these workers; only a few female respondents were receiving benefits from the Tamil Nadu government's scheme for women welfare. The findings also show uneven income distribution, with women and certain social groups are more often found in the lower income brackets. Although most workplaces are rated positively in terms of environment, many workers still face tough realities like physically demanding tasks, repetitive routines, low pay, and limited control over their schedules. These challenges contribute to financial insecurity and limit chances for growth and progress. Overall, the results point to the need for better support for housekeeping workers, especially those in less stable roles. Improving job security, offering fair pay, and increasing access to benefits are key steps towards ensuring fair treatment and a better quality of life for this essential workforce in Coimbatore's organised private sectors.

Employability among migrants in India: A Study based on PLFS 2020-21

Hundi Pulu PhD Scholar, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

Migration is a universal phenomenon that occurs as a result of various push and pull factors on the respective place of origin and the place of destination. The push and full factors of migration can be traced through various reasons that force people to migrate. The internal labour migration across India is a key feature of spatial distribution of labour throughout different states, which renders important contribution in India's overall development. India has a large share of young population between the age group of 15-59 years, as a result, migration plays a very important role in catering to employability, both within or outside the nation and to the actively work seeking population of India. Thus, the current paper attempts to analyse employment status of migrants in India, based on evidences from PLFS 2020-21, and various employment related due to which people move from one place to another. The findings of the study put forward that, most of the migrants in India are self-employed. While larger number of male migrants are engaged in self-employment, regular waged salary and casual wage labour compared to female, larger share of female migrants was attending domestic duties. Indicating majority of married women are engaged in low or unpaid domestic duties like sewing, tailoring, weaving etc. For male migrants, in most of the streams, migration is taking place due to employment related reasons, while female migration happens largely due to marriage on every stream of migration. Over the years, migration has continued to contribute in delivering employability to substantial share of the population, shaping overall employment dynamics in India, more so, for the male population of the country. Keywords: Migration, Employment, Gender, Status and Stream

WORKSHOP SESSION 2

Demographic Determinants of Labour Force Participation in Telangana State: An Empirical Study

Ramavath Kavitha PhD Scholar, Central University of Kerala, Kasaragod, Kerala

Syam Prasad Assistant Professor, Central University of Kerala, Kasaragod, Kerala

Mudavath Paramesh PhD Scholar, Central University of Kerala, Kasaragod, Kerala, PhD Scholar

Sumana . PhD Scholar, Central University of Kerala, Kasaragod, Kerala, Ph.D Research Scholar

This is an empirical study on demographic determinants of labour force participation in Telangana State. The study's secondary data uses a binary logistic regression model. The dependent variable is such as in the labour force and not in the labour force, with explanatory factors including workforce status, sector, gender, marital status, social group, age group, education level, and household type. The study results show that gender plays a significant role in women being underrepresented in the labour force compared to men. This reflects the prevailing social norms and no employment opportunities for women in rural areas.

In social groups, being a significant determinant, those belonging to the Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Class (OBC) categories are more participatory in the labour market than those from the General category. They engage in labour, often under insecure and informal conditions. In the age group between 25 and 44 year, there is more labour force participation. Education levels show that higher levels of education, primary, secondary, higher secondary, and graduate degrees, significantly increase the likelihood of labour force participation. This study finds that it provides better job opportunities and improves employability. Job security and satisfaction with work-life balance influence labour market engagement.

The logistic regression model used in the study is robust and reliable, with no serious multicollinearity issues among the explanatory variables, as confirmed by the Variance Inflation Factor (VIF) values.

The study recommends: integrating gender-sensitive labour market programmes and women's labour force participation, mainly in rural areas; providing skills development and training programmes to create employment; incorporating the caste Telangana's employment schemes to address the historical disadvantages faced by SC and ST groups; promoting

skill development initiatives for rural youth and women in formal sector employment opportunities; and institutionalising anti-discrimination measures in recruitment and workplace practices across public and private sectors to ensure equal opportunities for all social groups.

Bridging the Skills Gap: Analysing India's Vocational Training Ecosystem

Isha Gupta Fellow, Justjobs Network, New Delhi

Aditya Prem Kumar Research Associate, Justjobs Network, New Delhi

The transition from education to employment represents a critical challenge in contemporary labour market dynamics, particularly in the Global South, where youth unemployment and underemployment persist despite periods of economic growth. Globally, nearly one in five (21.0%) individuals aged 15–24 years are not in education, employment, or training (NEET). In India—home to the world's largest youth population aged 15–29 years—approximately 32.9% (or every one in three youth) fall into the NEET category. Youth labour force participation stands at 46.5%, with female participation substantially lower at 28.8%. These challenges are particularly acute for vulnerable youth from low-income households, rural areas, and marginalised communities, who face multiple, intersecting barriers to quality training and decent work.

This study focuses on India's vocational training ecosystem, with a particular emphasis on Industrial Training Institutes (ITIs), which serve as a primary channel for state-led skill development. It examines the structural and systemic factors that shape education-to-employment transitions, drawing on field research and consultations with students, faculty, industry representatives, and various government officials. The analysis explores challenges that youth of India faces when transitioning from education to employment—such as the adequacy of training infrastructure, the alignment of curricula with evolving industry needs, the extent of industry linkages, and the availability of career guidance and placement support, among others.

By mapping these barriers, the study contributes to ongoing efforts to design more inclusive and effective skill development policies. Its findings aim to strengthen institutional capacity, improve alignment between training and labour market demands, and expand equitable employment opportunities for India's most disadvantaged youth. It aims to deepen understanding of how institutional capacity, policy design, and socioeconomic conditions intersect to influence vocational education outcomes. The study's insights are intended to inform more inclusive and responsive skill development approaches, with a view to enhancing the employability of disadvantaged youth.

Does Occupation Matter for Diet Diversification and Nutrient Intake? The Case of Indian Households

Umanath Malaiarasan Assistant Professor, Madras Institute of Development Studies, Chennai, Tamil Nadu

This study investigates the relationship between occupational status and household dietary diversity and nutritional intake in rural and urban India, drawing on nationally representative Household Consumption Expenditure Survey (HCES) data. Using an Inverse Probability Weighted Regression Adjustment (IPWRA) framework, we estimate the causal effects of multiple occupational categories—self-employment, regular wage/salaried, farmers/agricultural self-employment, and others—against casual labour as the reference group. The outcomes considered include the Household Dietary Diversity Score (HDDS) and per capita daily intake of calories, protein, and fat. The treatment model is estimated via multinomial logit regression, while the outcome model is specified as a linear regression, enabling robust estimation under the double-robust property of IPWRA. Additionally, logistic regression is employed to identify socioeconomic, demographic, and access-related determinants of occupational choice.

The results reveal clear occupational gradients in nutrition outcomes. In both rural and urban areas, regular wage employment yields the largest positive effects on HDDS, reflecting the nutritional advantages of stable income. Self-employment, particularly in urban areas, leads to substantial calorie gains, suggesting the potential of entrepreneurial activity to improve energy availability. Farmers, despite direct access to agricultural produce, show more modest gains in dietary diversity, likely due to reliance on self-produced staples and market access constraints. Households in the "others" category, often engaged in irregular or precarious work, display lower dietary diversity and in some cases reduced protein intake, despite higher calorie or fat intake—indicating reliance on energy-dense but less nutrient-rich foods. Determinants analysis highlights the roles of education, social identity, household composition, and internet access in shaping occupational participation.

Nutrition policy in India should closely integrate with employment and livelihood strategies to improve dietary diversity and nutrient adequacy. Stable job creation and targeted schemes—such as adding food vouchers, fortified foods, or subsidised produce to programmes such as—Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)—can better address gaps for vulnerable groups. Urban policies must promote healthy retail access, regulate processed food marketing, and strengthen workplace wellness initiatives to tackle emerging dietary imbalances.

Tourism Development, Capital Inflow, and Pollution Tax in a Small Open Tourism Economy: A Theoretical Analysis

Niladri Saha PhD Scholar, Visva-Bharati, Bolpur, West Bengal

Priya Brata Dutta Assistant Professor, Visva-Bharati, Bolpur, West Bengal

This paper develops a theoretical framework for a small open economy comprising three structurally interlinked sectors: agriculture, informal, and tourism service sector. The agricultural sector employs land and labour as its primary factors of production and supplies intermediate goods to the informal production sector, which contributes to domestic output but remains outside formal regulation. The tourism sector uses labour and specialised touristic capital to produce services for foreign visitors, generating foreign exchange earnings but also creating environmental pollution as an inevitable by-product of its activities. To internalise this environmental externality, the government imposes a pollution tax specifically on tourism-related emissions. The model explicitly incorporates the input–output linkages among these sectors, the mobility of labour across sectors, and the partial mobility of touristic capital between domestic and foreign markets.

Analytical derivations show that an exogenous increase in foreign tourist arrivals leads to a higher equilibrium price and output of tourism services. This expansion raises employment and factor returns in the tourism sector, generating positive spillovers for the rest of the economy through increased demand for agricultural and informal sector outputs. However, it also intensifies environmental degradation, introducing a direct trade-off between economic gains and ecological quality. While the increase in tourism activity boosts national income, its net effect on overall social welfare remains indeterminate and depends on the relative valuation of environmental quality in the social welfare function. Capital flows into the tourism sector further magnify this trade-off: inflows of touristic capital increase production capacity, factor incomes, and foreign exchange earnings, but also exacerbate environmental degradation; conversely, capital outflows reduce both production and pollution levels.

Policy experiments reveal that raising the pollution tax curbs emissions improves environmental quality but at the cost of reduced tourism output and sectoral incomes, whereas lowering the tax produces the opposite outcome. These results underscore the sensitivity of the tourism–environment nexus to both external shocks (e.g., changes in tourist inflows or capital mobility) and domestic policy interventions.

The framework offers valuable insights for policymakers in small open economies heavily dependent on tourism revenues yet vulnerable to environmental degradation. By formalising the structural interdependencies between sectors and explicitly accounting for environmental externalities, the model provides a tool for evaluating policy options that balance tourism-led economic growth with environmental sustainability. The findings suggest that optimal policy design must weigh short-term income gains against the long-term welfare costs of environmental depletion, thereby guiding the pursuit of a more sustainable growth trajectory.

Discerning the Financial Decision-making among Gig Workers: Towards a Conceptual Framework

Ananya K PhD Scholar, Manipal Academy of Higher Education, Manipal, Karnataka

Rajasekharan Pillai K Professor, Manipal University, Udupi, Karnataka

The gig economy has redefined employment structures globally, offering flexibility but exposing workers to financial instability due to irregular income and lack of traditional benefits. Gig workers often face heightened financial vulnerability, prompting questions about how they make financial decisions under uncertainty.

This study investigates the antecedents of financial decision-making (FDM) among gig workers, focusing on the interaction between income volatility (IV), mental accounting (MA), and financial cognition (FC). A bibliometric analysis and thematic literature synthesis were conducted using peer-reviewed articles from databases such as Scopus and Web of Science. VOSviewer was used to map keyword co-occurrence networks and identify conceptual clusters.

Findings show that income volatility significantly influences financial behaviour, leading to increased financial stress and precautionary actions such as saving and reduced discretionary spending. Gig workers often use mental accounting to manage irregular cash flows, categorising income into mental budgets. While this supports short-term control, it may hinder optimal resource allocation and long-term planning. Financial cognition comprises numeracy, literacy, and risk perception which enables informed decision-making but is often undermined by cognitive biases such as overconfidence and present bias. The bibliometric analysis revealed two dominant clusters: one focused on behavioural theories like MA and loss aversion, and the other on structural challenges within the gig economy. Their intersection highlights the need to understand how behavioural tendencies and economic contexts jointly shape financial decisions.

This study is innovative in integrating behavioural finance, cognitive psychology, and economic vulnerability to develop a conceptual framework explaining financial decision-making among gig workers. A key limitation is the reliance on secondary data and bibliometric methods, which may not fully capture the lived experiences of gig workers across diverse contexts. The findings have practical implications for policymakers, educators, and gig platforms. Tailored financial literacy programmes that address behavioural biases and promote adaptive financial habits are essential. Platform-based tools that support income smoothing and financial planning can enhance gig workers' financial resilience. Understanding the cognitive and psychological dimensions of financial decision-making is crucial for designing inclusive policies that support economic security in the evolving labour market.

From Informality to Formality: Enhancing Skills, Digital Access, and Social Protection for Informal Workers.

T Shammy Assistant Professor, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu

The informal economy continues to serve as the backbone of livelihoods across much of the Global South, yet informal workers remain excluded from structured skilling systems, social protection schemes, and pathways into formal employment. This paper seeks to address this gap with three main objectives: firstly, to analyse the barriers limiting informal workers' access to education and skill development; secondly, to examine how global frameworks, particularly the Sustainable Development Goals (SDGs) such as SDG 4 on lifelong learning and SDG 8 on decent work, engage with the informal sector; and thirdly, to propose strategies that can support the integration of informal workers into formal skilling and employment ecosystems.

Methodologically, this research is a qualitative desk-based review of literature. It synthesises peer-reviewed studies, global policy reports, and case-based practices to build a comparative analysis of barriers, enablers, and policy mechanisms. No primary data were collected, and the findings are interpretive in nature, aimed at generating insights for policy and practice rather than empirical testing. The scope focuses on skilling pathways (formal, non-formal, and informal), digital access models, social-protection linkages, and monitoring and evaluation approaches. Limitations include reliance on secondary sources, uneven regional coverage, and limited sector-specific depth, making the findings indicative rather than universally prescriptive.

The review identifies several persistent challenges: a lack of awareness of training opportunities, daily-wage constraints that reduce participation in formal programmes, limited access to finance and social security, and inadequate recognition of skills gained through experience. Yet, evidence highlights viable strategies for inclusion, such as modular and flexible training, mobile learning units, local-language digital platforms, recognition of prior learning (RPL) mechanisms, and linking training with micro-insurance or basic health coverage. Monitoring and evaluation through skill tests, observation, and surveys are also essential to ensure quality and impact.

In conclusion, integrating informal workers into the formal sector requires a holistic approach combining flexible skilling models, strong credentialing systems, digital inclusion, and social protection linkages. Grounding these strategies within national SDG roadmaps can enable a shift from vulnerability towards resilience, supporting inclusive growth, decent work, and lifelong learning.

Health Precarity and Choosing Platform Work: A Study of Gig Workers in Kolkata

Prithwi Banik PhD Scholar, Christ University, Bengaluru, Karnataka

The gig economy's global expansion has changed labour market structures by providing flexible but precarious employment that is frequently controlled by algorithmic platforms and without conventional worker protections. The precarious work conditions can have probable serious implications on the health of the workers. The health implications of gig workers in the Indian context are limited, specifically if quantitative assessments of both physical and mental health are considered. Furthermore, amidst the work's nature and the participation of the workers, on the contrary, it is necessary to look at the diversity within gig work categories, particularly how various gig work types (such as driving, delivery, and household services) differ in terms of socioeconomic determinants and outcomes.

This study follows a two-fold approach. Firstly, it aims to investigate how precarity impacts the health conditions of the gig workers. It further examines whether the health outcomes vary significantly across the different types of gig work. Secondly, it aims to assess the structural and intersectional determinants of gig employment patterns and occupational segmentation in platform-based gig work.

The study uses data collected from 300 gig workers operating in Kolkata from a primary survey. The sample was drawn to ensure equal representation of three major types of platform-based gig workers — cab drivers, food delivery workers, and household service providers, with 100 respondents from each category. In the first part, this study uses Spearman's rank correlation to understand the interplay of different challenges faced by the platform-based gig workers affecting health conditions. To know if the health outcomes vary significantly across different work types, it uses the Kruskal-Wallis H Test. Then, it uses the Mann-Whitney U test for pairwise comparisons between different categories of gig work, considering two groups at a time, to examine the differences between different types of health conditions. The second part of the analysis focuses on understanding the determinants of employment patterns using econometric models. The binary logistic model used in the analysis distinguishes between part-time and full-time gig workers, while the multinomial logistic regression model (MLRM) analyses sectoral differences between different types of gig work.

With existing economic pressures, systemic injustices, and ingrained hierarchies that influence engagement in the platform economy, this study contradicts the prevalent notion that gig work is a flexible and empowered substitute for regular employment. Particularly in India, gig work is a necessity rather than a choice because of the lack of formal employment opportunities, unequal educational opportunities, and deteriorating social safety. A systemic normalisation of precarity is indicated by the continuation of gendered division of labour, economic inequity, and health-related vulnerabilities across various platform employment types. Large segments of the urban workforce are increasingly choosing gig work as their primary source of income; therefore, policymakers must act quickly to control platform labour, provide fundamental safeguards, and remove the systemic obstacles that support this new system of unorganised work.

An Empirical Study on Occupational Segregation in India's Labour Market

Neha Chauhan PhD Scholar, Symbiosis International University, Pune, Maharashtra

Nausheen Nizami Associate Professor, Head, Department of Economics, Pandit Deendayal Energy
University, Gandhinagar, Gujarat

It seems that the contribution of females to farm labour is quite conspicuous in the Indian economy. In the cultivation of cotton combinations, the female labour employed was about 25% more than the male labour. The female labour is primarily employed in weeding operations, and about half of the total female labour employed is for this purpose only. Extensive weeding is required for the *kharif* crops, because weeds grow in abundance during rains. As such the female labour is mostly concentrated in the months of July, August ,and September. Most of the hand-weeding is done by females. Men mostly perform those weeding operations for which bullock power can be used such as the weeding between the rows of the standing crops. The picking of cotton is almost exclusively done by females. That is how we find that in the harvesting of cotton combinations, the preponderant share was that of female labour.

The study provides a detailed roadmap for exploring the historical and contemporary dynamics of female labour force participation rate (LFPR), particularly in India's agricultural sector. This study examines various facets of gender roles in the labour market, using both historical context and empirical analysis to shed light on trends, barriers, and changes in it over time. The study relates to 'occupational segregation', which delves into its trends and factors. The first section provides a historical and theoretical overview of segregation in the labour market, particularly focusing on how gender-based barriers and norms have perpetuated segregation. In the "Literature Review", prior research on occupational segregation is analysed, helping to frame analysis in light of established studies and theories. The "Dissimilarity Index" section introduces a statistical measure to quantify segregation levels between male and female workers across different occupations using International Labour Organization (ILO) data for past decades.

Formalising the Informal Sector: Political Economy Challenges for the New India

Bir Singh Professor, Department of Economics, Delhi College of Arts & Commerce, New Delhi

The United States of America (US) tariff war on India and her forced disruption of oil imports from Russia constitute an assault on India's sovereignty. While it is demeaning, it will adversely impact India's industrial and economic growth. Given the dominance of China and the other East Asian economies in the world industrial output and trade volume, it has forced the policy makers to search for innovative policy options in this regard.

India's industrial and economic performance tumbled sharply as the propaganda of a 'New India' took the centre stage since 2014. It happened at a time when the world was pushing forward its fourth industrialisation, and India's policymakers were winding up vital institutions of state-led capitalism that were promoting inclusive development. The planning commission was the first casualty of such misadventure that comprised several other interventions such as demonetisation, Goods and Services Tax (GST) implementation, and mishandling of the COVID 19 pandemic. As a result, economy suffered though the duality of formal and informal sectors influenced the degree of the impact. Among all, the informal economy was the worst hit sector where millions of people lost jobs as informal units faced liquidity crunch. The remaining others were decimated by the faulty implementation of the GST. These two policy blows had bared weaknesses when the COVID lockdown brought the entire economy to a grinding halt. The weakening of informal economy pulled off the levers of entire economy. Hasty and hazy policy interventions have not only jolted the survival of the informal sector, they also disrupted the organised manufacturing growth.

Given the lower growth of the labour intensive industry groups and disruption of the informal economy, formalisation of the informal sector warrants an innovative policy mix for reducing and diluting the economic and social vulnerabilities of the informal workers. We argue that expediting the formalisation can't be imagined without resuming the economic planning, implementing an explicit industrial policy, and improving the governance to meet the constitutional spirit to deal with the compulsions of the emerging global political economy.

Impact of Education on Female Labour Force Participation in Maharashtra State

Ashwini Mangesh Pathak PhD Scholar, Savitribai Phule Pune University, Pune, Maharashtra
Amita Yadwadkar Assistant Professor, Savitribai Phule Pune University, Pune, Maharashtra

Falling or low levels of female labour force participation (FLFP) are seen at the all-India level over the years. In Maharashtra, one of the highly industrialised states, the FLFP rate is seen to be increasing at a slow rate. Policy makers are emphasising the need to improve the FLFP rate. Female labour force participation rates are influenced by many factors such as gross domestic product (GDP) growth, and social and cultural factors. Education too is an important factor influencing these rates. Some work for India has been done on this but not much work exists for Maharashtra.

Given this, this paper attempts to study the impact of education on FLFPR in Maharashtra. For this we have used data from Periodic Labour Force Survey (PLFS) from 2017-18 to 2023-24. The education categories considered are illiterate, literate, and up to primary, middle, secondary, higher secondary, diploma/certificate course level, graduate and post graduate and above.

We have found that the FLFP in Maharashtra for all the education categories has increased during the period of study. The category of Diploma/Certificate course exhibits the highest FLFPR in many of the years of the study. We also have found that for the period of study (2017-18 to 2023-24) the FLFP rate exhibits the classic U- shaped relationship with education levels (when the category of diploma/certificate course is removed). Over the period of study (2017-18 to 2023-24), we find that the increase in FLFPR is highest at 55.7% for the higher secondary education category.

Given this we recommend that to increase FLFP rate in Maharashtra, female education should be encouraged especially skill-based education like diploma or certificate-based courses. More women's universities or colleges should be promoted. Further since FLFP is high at the illiterate or lower levels of education, we recommend that more employment opportunities at this level should be provided for women with emphasis on child care and transport facilities.

Rural Employment Dynamics in Maharashtra

Madhav Shinde Professor, BPHES' Ahmednagar College, Ahilyanagar Savitribai Phule Univeristy Pune, Ahmadnagar, Maharashtra

Jivan Solanke Associate Professor, Lt B.R. D. Women's College, Nashik Road, Nashik, Maharashtra, Nashik, Maharashtra

India's rural economy has been transforming from farm-based activities to non-farm activities, particularly in recent time. The non-farm activities are important in shifting the burden of rural population from agricultural activities. Presently, farm sector accommodates about 43.0% of total workforce in India. However, the proportion of workforce is quite higher in rural areas. Presently 59.4% of rural workforce is engaged in agriculture sector. The proportion for female workers engaged in agriculture is around 77.0% of total workforce in rural areas of the country. It is clear that the farm or agriculture activities are still largest employer for rural population especially female workforce.

The proportion of workers engaged in agriculture differs state by state in India. Chhattisgarh records highest workforce engaged in agriculture and allied activities while Delhi has lowest share of workforce engaged in agriculture. Maharashtra which is one of the industrially leading states in India had around 43.0% of workforce engaged in agriculture sector in 2023-24, a declined from 54.3% in 2011-12. However, the proportion of workforce engaged in agriculture in rural areas is remarkably higher than the national average. Presently, 67.55% of the rural workforce in Maharashtra is engaged in agriculture which has declined from 77.6% in 2011-12. Going in details of gender wise distribution of rural workforce in Maharashtra, it can be found that presently about 59.0% of rural male workers and 81.5% female workers are engaged in agriculture which is significantly higher than the national average. From this, it is clear that the

farm or agriculture activities are still largest employer for rural population especially female workforce in Maharashtra as well as at national level.

Present paper attempts to assess the transformation of Maharashtra's rural economy in terms of employment dynamics. The analysis is based on the data collected from Employment Unemployment Survey (EUS) and Periodic Labour Force Survey (PLFS) reports, and reports published by the Department of Labour Bureau, Government of India. The paper finds the changes in the rural employment dynamics in Maharashtra but the pace of the changes is below the expectations. The paper also found slight decline in worker population ratio (WPR) for male workforce while it shows increasing trend for female workforce.

Rethinking Rural Employment Pathways for Young Women in India

Kripa Krishna Research Associate, JustJobs Network, New Delhi

India's demographic dividend where the working-age population outnumbers dependents offered a historic opportunity for economic growth. Yet, this potential is slipping as job creation lags population trends and youth employability remains alarmingly low. Surveys show only that less than half of the youth meet employability standards, with rural areas facing acute barriers. A lack of market-aligned skills, weak placement systems, and entrenched social norms prevent many young people, especially rural women, from entering formal, productive work. While government programmes and policies such as Pradhan Mantri Vikas Yojana (PMKVY) and Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) aim to address these gaps, these training programmes rarely translates into sustainable employment. Certification often yields only marginal income gains, while inadequate market linkages and gendered skilling pathways limit women's mobility and access to decent jobs. Rural young women, particularly from Scheduled Caste and Scheduled Tribe communities, confront intersecting disadvantages: early school dropout, restricted mobility, family pressures, and exclusion from skilling infrastructure. These systemic barriers are reflected in severe gender gaps in workforce participation and NEET (Not in Education, Employment or Training) status, where 57% of women aged 15–29 fall under NEET status, compared with 13% of men.

This paper draws on research by the JustJobs Network in select northern states to examine how social and cultural contexts shape rural women's skilling-to-employment pathways. Using qualitative fieldwork, focus group discussions, and secondary analysis, the study investigates how current skilling programmes address, or fail to address, women's aspirations, constraints, and migration decisions. It also assesses the roles of intermediaries connecting rural youth to labour market opportunities. The presentation will situate these insights within India's broader skilling landscape and highlight lessons for policy, programme design, and practice. By integrating literature findings with field-based evidence, the paper seeks to inform systemic approaches that move beyond fragmented training schemes and create pathways to decent work and inclusive growth.

Invisible yet Indispensable: The Current Realities of Female Domestic Workers in India.

Amrita singh PhD Scholar, Christ University, Bangalore, Karnataka

Maya K Assistant Professor, Christ University, Bengaluru, Karnataka

This study aims to analyse the current scenario of female domestic workers in India, a labour demographic that is highly undervalued in spite of its vital contribution to numerous households. This research draws on empirical research, policy analysis, and new data to understand how the intersection of gender, caste, class, and informality has changed the working and living conditions of these women.

The article traces the background and the numbers related to the hiring of households in India and further explains how the two factors — legal neglect and negative societal perception — have resulted in the systemic exclusion. Besides that, it also proceeds with the mental health impacts of domestic workers, highlighting that among the emotional discomforts, withdrawal of recognition, and social isolation resulting from being in exploitative working conditions and lacking the protection of law, the last two get intensified. Some of the recent events which have been critically evaluated to both acknowledge the advancements made and recognise the remaining gaps are the effect of COVID-19 pandemic, the rise of digital recruitment platforms, and increased demands for legislative reforms.

The study also brings to light the need for wide-ranging policy measures and statutory safeguards that acknowledge work performed at home as valid work, thereby guaranteeing social justice and social security to an extremely deprived but necessary labour pool in India. Considering these facts, the article intends to delve into the current situation of women home helpers in India by using secondary data, government publications, labour studies, and feminist critiques as its sources. It wants to acquaint itself with the social and economic constitution of these workers, the difficulties encountered by them in the aspects of work conditions, legal status, and accessibility to social security, and the reaction of the authorities to the problem or the lack of it which influences their lives.

Through its analysis, the paper is conveying that domestic workers should be recognised as formal labourers without any further delay, and it is necessary to have gender-sensitive labour protection that is institutionalsed for the revival of their honour in the work.

Entrepreneurship and Empowerment among Women through Self-Help Groups: A Case Study of Hoshiarpur District, Punjab, India

Sanjana Saggi Assistant Professor, Government College, Hoshiarpur, Punjab

The term microfinance refers to be provision of financial services to the poor of the poorer. Microfinance emerged in the early 1970s with the recognition that the poor need a wide range of financial services including credit, savings, insurance, and money transfers. Experience around the world reveals that this group-based approach can equip the poor to access financial services on easy terms and conditions. Microfinance has the capacity to enhance the socioeconomic development of the vulnerable and marginalised group, especially women by creating a group based structure that builds mutual support and trust.

Self-realisation and self-initiative are the two most powerful weapons to wash poverty out from the world map. This dynamic quotation is being translated to one word that is Self-Help Group (SHG). It is proverbially true that there is a great strength in unity. Once a group of people unite, they become strength to reckon with. Self-Help Group are the voluntary organisations, which disburse micro-credit to the members and facilitate them to enter into entrepreneurial activities. This affects the member's life in various ways: their quality of life improves a lot, they can develop skills and abilities in various productive activities, there is increase in their income and savings, and they become productive and important member of the family.

The present paper examines the performance of SHG in promoting socio-economic status of the members with respect to how women beneficiaries become entrepreneurs and empowered through SHGs and identify the problems experienced by them. The findings of the study reveal that SHGs play a crucial role in transforming women from passive members to active participants in their development, leading to long-term sustainable change in their lives.

The Gendered Structure of Work in India: Participation, Segregation, and Wage Inequality

Anuja V P PhD Scholar, Jawaharlal Nehru University, New Delhi
Adarsh Mishra PhD Scholar, Jawaharlal Nehru University, New Delhi

This paper examines the role of gender in shaping occupational dynamics in India using NSSO and PLFS data. The study has analysed trends in labour force participation rate (LFPR), worker population ratio (WPR), occupational segregation, and wage differentials across female-dominated, mixed, and male-dominated sectors. The study finds that labour force participation of women declined sharply between 2011–12 and 2017–18, followed by a substantial recovery

thereafter. Rural areas contributed significantly to this resurgence, with female LFPR rose from 25.8% in 2017–18 to 50.1% in 2023–24, whereas urban female participation remained relatively stagnant, reaching only 29.8% in 2023–24. Occupational analysis reveals persistent female concentration in caregiving, domestic services, food processing, and traditional production roles, while professional and higher education roles have gradually become more gender-balanced over time. The concentration of women in low-paid and undervalued sectors continues to reinforce occupational segregation. Wage analysis further highlights structural inequalities, with female-dominated occupations systematically earning less than male-dominated and mixed occupations. Notably, in female-dominated sectors, women earned less than half of male counterparts' average daily wages by 2023–24, highlighting structural undervaluation of women's work. Mixed occupations, despite initially offering higher wage premiums, lost relative advantage over time, while male-dominated occupations-maintained earnings superiority. The findings underscore the need for policy interventions to promote gender equity, improve valuation of female-intensive sectors, and facilitate women's entry into higher-paying male-dominated and mixed occupations, fostering inclusive growth in India's labour market. The findings underscore three key patterns: (1) though the women's participation in the labour market has increased, particularly in rural areas, most of the females are underemployed and under paid; (2) occupational gender segregation persists, albeit with a gradual reconfiguration of roles over the years; and (3) both gender and occupational wage disparities remain persistent, especially in female-dominated occupations.

The study emphasises the need for policy interventions targeting the recognition and valuation of female-intensive occupations, promotion of gender equity in higher-paying professions, and reduction of structural wage gaps. These measures are critical for ensuring inclusive labour market growth and achieving long-term gender equality in employment in India.

WORKSHOP SESSION 3

Turnover Intention among Non-Academic Staff in Self-Financing Institutions

Stephy Antony PhD Scholar, Karunya Institute of Technology (Deemed University), Coimbatore, Tamil Nadu

Simon Jacob Chemmannur Professor, Sahrdaya Institute of Managemnt Studies (SIMS), Thrissur, Kerala

The higher education landscape in India, particularly among self-financing institutions in the southern region, has evolved rapidly over the past decade. These institutions rely heavily on non-academic staff to manage administrative, technical, and student support services. Despite their critical contributions, non-academic employees often receive less attention in institutional planning and academic research. In recent years, concerns over rising turnover intention among this workforce have become increasingly evident.

According to a survey conducted by the All India Council for Technical Education (AICTE, 2022), nearly 37% of non-teaching staff in self-financing institutions reported a desire to leave their current roles within the next two years, citing reasons such as lack of job satisfaction, ineffective leadership, and absence of career growth. Similarly, a regional study done by the Southern Education Management Forum (SEMF, 2023) highlighted that over 42% of non-academic staff in private colleges across Kerala, Tamil Nadu, and Karnataka experience moderate to high levels of occupational stress, with 28% indicating high turnover intent. Factors such as workplace happiness, leadership style, and intrinsic motivation have been identified as critical determinants of employee retention and organisational commitment. Research shows that supportive leadership and a positive work environment can significantly reduce employee burnout and enhance retention. However, there is limited empirical research focusing specifically on how these factors influence turnover intention among non-academic staff in self-financing institutions, particularly in the southern region of India.

The present study aims to fill this gap by exploring the relationships between workplace happiness, leadership style, intrinsic motivation, and turnover intention. It will also investigate the mediating role of job satisfaction and the moderating influence of demographic factors such as age and tenure. By incorporating a data-driven approach and drawing on recent evidence, this study intends to offer practical insights that can inform institutional strategies

for improving employee engagement and reducing turnover. Ultimately, the goal is to develop a sustainable human resource framework that supports long-term staff retention and institutional excellence in the self-financing education sector.

Technical Education and Female Labour Market Outcomes in India: Evidence from Periodic Labour Force Survey 2019–20

Hannah Liza Varghese Young Professional, NITI Aayog, New Delhi

This paper analyses the role of technical education in influencing female labour force participation (FLFP) in India using unit-level data from the Periodic Labour Force Survey (PLFS) 2019–20. Despite improvements in women's educational attainment, FLFP remains low, with significant gender gaps across employment outcomes. The study addresses whether technical education enables better labour market integration for women compared to those with general or no formal training.

A multiple logistic regression framework is applied to examine three dimensions: women's participation in the labour force, employment status within the labour force, and the likelihood of accessing regular wage or salaried work. All variables follow PLFS definitions, and the models control for demographic and socioeconomic factors including age, caste, religion, marital status, and location. Preliminary FLFP data from PLFS 2023–24 suggest a modest post-pandemic recovery, primarily in rural and self-employment segments, but no marked improvement in regular salaried jobs, reinforcing the relevance of our 2019–20 baseline for structural analysis.

The results indicate that women with technical education are more likely to enter the labour force, obtain employment once in it, and secure regular wage work, compared to women without technical education. However, the positive effects are moderated by structural and socio-cultural barriers, suggesting that education alone is insufficient to overcome constraints shaped by household responsibilities, social norms, and limited opportunities in local labour markets. The findings underline the need for policies that not only expand women's access to technical and vocational education but also strengthen the demand for female labour. Measures such as sectoral diversification, improved childcare and transport facilities, and employer-linked training programmes are essential to convert educational investments into sustainable employment gains.

By highlighting the role of technical education alongside broader socio-economic determinants, this study contributes to the literature on female labour supply in India and offers insights for designing interventions that can improve women's participation in productive and quality employment.

Empowering Rural Elderly Labour through MGNREGA: Pathways to Active Ageing-A Narrative Review

Aiswarya M PhD Scholar, Pondicherry University, Puducherry

P. B. Shankar Narayan Professor, Pondicherry University, Puducherry

India's demographic landscape is undergoing a substantial transition, with the proportion of elderly (aged 60 and above) expected to nearly double over the next three decades. This shift poses significant challenges for the rural labour force, where ageing intersects with poverty, informal employment, and limited social protection. The concept of active ageing, originally proposed by the World Health Organization (WHO), emphasises continued participation in social, economic, and cultural life alongside physical and mental well-being. Within India, particularly in rural areas and states such as Kerala, active ageing has become closely linked with public employment schemes such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), old-age pensions, health insurance, and community-based support structures.

This narrative review synthesises evidence from Indian and international literature on the themes of active ageing, elderly dependency, rural livelihoods, and the role of public employment programmes in promoting ageing with dignity. The review draws upon studies published across the last two decades to examine patterns of elderly work participation, socioeconomic independence, and the psycho-social challenges of ageing.

Findings indicate that older adults in rural India continue to contribute significantly to labour markets, often under conditions of economic necessity rather than choice. Women and socially disadvantaged groups face particular vulnerabilities, with higher levels of morbidity, lower literacy, and limited access to pensions or insurance. Research on MGNREGA demonstrates its dual role. On the one hand, the scheme provides a safety net and income for rural households and enables elderly workers to access wage employment close to home, on the other hand, it is often hindered by implementation issues such as wage delays, inadequate facilities at worksites, and the physical demands of the nature of work.

Evidence from Kerala highlights relatively better outcomes for elderly workers through stronger local governance, palliative care networks, and higher awareness. However, these benefits remain uneven across states. The literature also points to the complex relationship between ageing, mental health, and labour participation. Elderly workers face economic pressures that increase risks of poor health, including non-communicable diseases, depression, and dependency. Comparative perspectives from Europe and Asia underscore the importance of multidimensional models of active ageing that integrate work, health, and social participation. For India, there is a pressing need to move beyond welfare-oriented approaches toward comprehensive ageing policies that combine income security, productive opportunities, and community integration.

The review concludes that ageing in rural India must be recognised not simply as a welfare concern but as a developmental and labour market issue. Strengthening employment opportunities, improving financial literacy, expanding insurance coverage, and supporting intergenerational solidarity are essential to fostering active ageing. At the same time, targeted empirical research, particularly on elderly MGNREGA workers remains limited, necessitating longitudinal studies, regional comparisons, and mixed-method approaches.

Determinants of Crime in India: A District Level Analysis

Upal Das PhD Scholar, Visva Bharati University, Bolpur, West Bengal

Primarily based on the National Crime Records Bureau (NCRB) and the census data of India, we study the effects of various socioeconomic factors that might influence the incidence of major crimes caused in India. Using district-level data of 461 districts from 16 most populous Indian states, we examine the possible roles of population density, inequality, poverty, employment, gender, caste, and religion on the incidence of major crimes such as murder, kidnapping, theft, and robbery. We have considered district level data from 16 large and populous Indian states, viz., Uttar Pradesh, Maharashtra, Bihar, West Bengal, Andhra Pradesh, Madhya Pradesh, Tamil Nadu, Rajasthan, Karnataka, Gujarat, Odisha, Kerala, Jharkhand, Assam, Chhattisgarh, and Haryana. Our empirical analysis pertains to 461 districts of 16 major states (ranked by population size) of India, covering 85.21 % of the total population of India. The reason for selecting 2011 is that the data of the explanatory variables are from the Census of India which was last published in 2011 (the latest available data). We have selected the explanatory data as mentioned since there has been no such study in India at the district level that examines the combined effects of inequality, poverty, caste, religion, and gender on the measures of crime. We have checked our regression results for heteroscedasticity, multicollinearity, and normality.

We find that degree of inequality is one of the prime causes of occurrence of crime, while gender (female-male ratio) moderates it. We also find that poverty has a negative effect on theft, kidnapping, robbery, and total crime. Work participation rate has a positive effect on theft, robbery, and total crime. Literacy was found to have a moderating effect on murder and kidnapping, while it has a positive effect on theft, robbery, and total crime. Finally, religion (ratio of Muslims to Hindus) is found to have a positive effect on the incidence of kidnapping.

Opportunity or Survival? Understanding Women's Self-Employment in India Using a Low-Pay Framework

Garima Mishra PhD Scholar, Allahabad University, Prayagraj, Uttar Pradesh

In India, female labour force participation (FLFP) has been historically low; till 2017-18 there was declining trend in female labour force participation rate which is called de-feminisation

of labour force due to U-shaped feminisation hypothesis. However, it started increasing since 2017-18. This increase in FLFP is due to an increase in self-employment from 51.4% in 2018 to 67.4% in 2024. This paper aims to study whether this increase is a positive economic response or a negative economic response, i.e., whether it is an opportunity-driven or distress-driven increase just to support household income.

This paper uses data from Periodic Labour Force Survey (PLFS) 2017-18 and 2023-24 to understand this increase and understand characteristics of these labourers. As far as methodology is concerned, this paper uses a low pay threshold, which is the minimum living wage a self-employed individual should earn. This low pay is based on the poverty line of the Tendulkar committee. To understand the characteristics of these workers, simple probit model is used.

The key findings are that 83.6% of female self-employed workers earn below the low pay threshold in 2024, which has increased from 79.3% in 2017-18. This shows that the majority of the increase in FLFP is distress-driven as they cannot even earn a meagre income to sustain their livelihoods. Probit model findings show that females are 53.0% more likely to be low-paid than males, which suggests that females pick up low-paying employment just to support their household in distress. Self-employed workers in all categories in rural areas are more likely to be low-paid as compared to agriculture. This shows the predominance of agriculture in rural areas and the absence of rural non-farm self-employment. The need of the hour is to provide women with education along with skills and formal credit to expand their businesses and grow out of opportunities and not distress.

Empowering the Informal Labour Sector through Holistic Employment

Eeshita Ghoshal Fellow, Symbiosis International University, Pune, Maharashtra

An overwhelming share of the Indian labour force, primarily the rural population, is employed in informal labour. Informal labour is a casual form of labour that provides no job security, social benefits, or adequate remuneration. As a result, members of this sector are deprived of a reasonable standard of living, education, and a healthy work environment. Over the years, the Government has introduced numerous policies to improve the livelihood of such people. However, as the data shows, consequential changes are yet to come. Several of these schemes have failed to meet their objectives. For instance, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) failed to pay the labourers regularly, the Integrated Rural Development Programme (IRDP) was disrupted by corruption and the absence of transparency, and the Zero Poverty UP Campaign failed due to poor planning. Youth Employment Scheme was launched to mitigate youth unemployment by providing short-term work and training opportunities. But it failed in meeting its objective due to inadequate training provided to the beneficiaries, exploitation, and no real job creation. Even today, most

of the informal sector workers work in unhygienic environments, which adversely affect them physically, mentally, spiritually, and emotionally.

This paper examines the concept of empowering and holistic employment of the informal sector. It deals with ideas of income determination, solving the problem of underemployment, and seasonal employment through alternative methods. It also explores the impact of cross-sectoral employment and small-scale enterprises on the labourers engaged in the informal sector. A case study is provided to illustrate the effectiveness of the ideas presented in the paper. It details a small-scale enterprise involved in ecofriendly construction located in the rural part of South-India. The enterprise focuses on doing justice to all the stakeholders involved through holistic and empowering employment primarily through cross-sectoral employment. It highlights not only the importance of considering economic factors but also the non-economic factors to determine the remuneration of the labourers.

Shifting Boundaries: Changes in Women's Time Allocation between Paid and Unpaid Work in India (2019–2024) and their Implications for Labour Market Participation

Prashansa D Jacob Master's Student, Christ University, Bengaluru, Karnataka

Anagha Thomas Master's Student, Christ University, Bengaluru, Karnataka

Dhreetimon Atreeya Master's Student, Christ University, Bengaluru, Karnataka

Mahek Jaiswal Master's Student, Christ University, Bengaluru, Karnataka

We all live with the same 24 hours, yet how those hours unfold can change the course of a life. For many Indian women, large parts of the day are consumed by cooking, cleaning, and caring for family members, work that is vital but invisible in official records. When labour surveys classify someone as "not employed," they often overlook the reality that women may already be putting in the equivalent of a full-time job at home. The Time Use Surveys give us a chance to see this hidden labour by tracking how every hour of the day is spent.

Looking at the 2019 and 2024 surveys, a familiar story emerges: men's days are dominated by paid work, while women's days are dominated by unpaid work. In 2019, men spent more than four hours in paid employment while women spent less than one. By 2024, both men and women had slightly increased their paid work minutes, yet the wide gender gap remained. What changed more dramatically was unpaid care. Women, who already shouldered most of it, saw this responsibility rise after the pandemic. Instead of replacing unpaid work with paid opportunities, many women simply layered one over the other stretching themselves thinner.

The rural–urban divide adds another layer. Rural women are more engaged in producing goods for their households, while urban women have more access to leisure and cultural activities. But, when it comes to domestic chores and caregiving, the story is almost the same

everywhere: women remain the primary caretakers. Age makes a big difference, too. Young women between 15 and 29 years lost significant time in paid work between 2019 and 2024. However, instead of gaining more rest or leisure, their time was absorbed by unpaid household duties. In other words, many young women are being pulled into domestic roles even before their working lives have a chance to take off. Older women also saw dips in paid work, but not as steep as their younger counterparts. The pandemic only magnified these pressures, slowing women's return to employment and making visible just how fragile women's access to the labour market can be when care needs increase.

If India is to close its gender gap in work, the answer is not only in creating more jobs. It lies in freeing up women's time, through better childcare, fairer sharing of domestic work, safer mobility, and more flexible job structures. Until then, women will continue to carry the double burden, and India will continue to miss out on the full strength of its workforce.

(Re)Defining Street Vending: A Case Study of Gujarati Market, Delhi

Sneha Alexander Master's Student, Jawaharlal Nehru University, New Delhi

Street vendors form an integral part of the urban, informal economy in India — providing goods and services to the urban population at affordable costs. This study draws on a variety of primary and secondary sources — including court judgements, parliamentary records, policy notifications as well as structured interviews with 20 vendors — to piece together the history and functioning of street vending at Gujarati market, Delhi. The paper documents the labour process as well as networks of procurement and manufacture which make the act of vending possible. While street vending is often reduced to the very act of vending, as we see in Gujarati Market, vending is situated at the tail end of a chain of activities including procurement and manufacture. Despite the apparent simplicity of the street vendor network, wholesale and retail systems serving street vendors are highly complex and structured. Thus, street vendors are analysed as a subset of the larger informal retail sector — being comparable to other informal retailers such as *kirana* stores.

Gujarati market as the site of investigation — where most vendors are Devipujak Vaghris of Gujarati origin — allows for a clear examination of the ways in which community identity impacts and shapes labour. Here, we see in operation, street vending as a form of labour that is deeply embedded in social, cultural, and political networks.

Street vendors in India have had a long and turbulent legal history. Their interaction with the state is not limited to issuance of licenses alone, but is mediated through court orders, police evictions, and regular visits from municipal authorities. The paper also discusses how street vendors are defined and argues that a street vendor's relationship with the state is not just a feature of their livelihood – but the very central characteristic that defines their lives.

Educated yet Unemployed: Navigating Gender, Education, and Employment Dynamics among Indian Women

Ruchi Shrivastava PhD Scholar, Jiwaji University, Gwalior, Madhya Pradesh

The paradox of being "educated yet unemployed" encapsulates a growing concern in India's socioeconomic landscape, particularly among women. Despite a marked increase in female educational attainment over recent decades, corresponding gains in workforce participation remain disproportionately low.

This study explores the complex interplay between gender, education, and employment dynamics among Indian women, aiming to uncover the structural and socio-cultural barriers that hinder their transition from education to meaningful employment. Drawing on data from national surveys, academic literature, and qualitative interviews, the research investigates why higher education does not translate into improved labour market outcomes for many Indian women.

Key findings point to a range of interrelated factors including patriarchal norms, limited access to safe and suitable employment opportunities, gendered expectations surrounding marriage and caregiving, and systemic biases within hiring practices. Additionally, the study highlights significant urban-rural and class-based disparities, where educated women in metropolitan areas may face underemployment, while their rural counterparts often drop out of the workforce entirely due to lack of opportunities and support.

The paper also examines the role of policy interventions such as skilling programmes, affirmative action in hiring, and workplace gender inclusion policies, assessing their efficacy and limitations. Importantly, it underscores the need for a holistic approach that combines educational reform, economic policy, and cultural change to address the disconnect between female education and employment. The persistence of female unemployment despite rising educational levels signals a deeper crisis rooted in systemic gender inequities. Empowering women through not just access to education, but also enabling environments for employment, is essential for India's inclusive development.

This research calls for reimagining employment strategies that are sensitive to the lived realities of Indian women, ensuring that education becomes a true lever of economic and social empowerment. Despite remarkable advancements in educational attainment, Indian women continue to lag in labour force participation. This paper examines how educational levels influence women's labour market engagement, explores persistent barriers to employment, evaluates the interplay between STEM (Science, Technology, Engineering, and Mathematics) education and employment outcomes, and investigates the socio-cultural constraints that limit the full economic potential of educated women. Leveraging data from national surveys, empirical studies, and recent literature, this study aims to identify the root causes of employment exclusion and propose actionable pathways towards greater gender equity in India's workforce.

A Study of Contractual Labour System's Challenges and Remedial Measures with Special Reference in Maharashtra

Kaluram Babusha Dhore Assistant Professor, CKT Arts, Commerce and Science College, New Panvel (Autonomous), Panvel, Maharashtra, -

Rajendrakumar Ramrao Gawhale Professor, G.S College, Khamgaon, Maharashtra

Balasaheb Sahebrao Patil Professor, Changu Kana Thakur Arts, Commerce and Science College (Autonomous), New Panvel, Maharashtra

Contract labour is an important part of every industry in India and Maharashtra. They are helping our economy directly and indirectly. The exploitation of contract labour is the biggest challenge in the period of liberalisation, privatisation, and globalisation (LPG) term, and also nowadays. For example, nature of work, working conditions, minimum wages, and implementation of government schemes etc.

This paper aims to focus on the overview of the contract labour system in India, it evolution, the analysis of the present law, and various loopholes under the Act. This paper also analyses the history of the Contract Labour Act and various committees' recommendations. The paper also explains the judicial interpretation of some important problems of contract Labour Prohibition and Abolition Act, of 1970].

Contract workers are employees who work for a company or organisation through a third-party contractor rather than being directly employed by the company, In India, contract workers are typically employed in industries such as manufacturing, construction, and services. These workers are hired temporarily and are often paid lower wages than regular employees. Contract workers may perform a range of tasks, from manual labour to technical work, depending on the requirements of the company. They may work full-time or part-time, and their employment may be project-based or for a fixed term. The use of contract workers is often favoured by employers as it provides flexibility in terms of hiring and firing, and allows them to avoid some of the legal requirements associated with regular employment.

Indian contractual labour plays a crucial role in Indian labour market system as far as the internal and external progress of the country is concerned. Employers need to adopt ethical practices and ensure that contract workers are treated fairly; trade unions can play a crucial role in educating workers about their rights. The way forward requires a concerted effort by all stakeholders to ensure that contract labour is used responsibly and ethically. The Contract Labour (Regulation and Abolition) Act, of 1970 has unfortunately not been able to understand the challenges of the contract labour.

Labour Markets: Care Dynamics in the Digital Age

Suganya K Assistant Professor, Lady Doak College, Madurai, Tamil Nadu

Juanita J Assistant Professor, Lady Doak College, Madurai, Tamil Nadu

Work culture in labour markets is undergoing a complete transformation with digital technology, creating some fascinating and challenging situations for individuals who hail from families that try to balance careers with caring for children and ageing parents. As facing the daily routine, in the digital age, requires the right balance between the digital and emotional skills, in individuals that enable them to cope with the work-life demands, this research is focused on the internal and external factors that affect the work environments in the labour markets. The need for analysing the strategies adopted by couples where the partners have good education and demanding jobs is crucial. In the present study, a qualitative design is adopted using a semi-structured interview with two couples. The inclusion criteria are that both partners are highly educated professionals and in their mid-career.

As the WHO reports that screen time contributes to various psychological and physiological health issues like depression, anxiety, distress, cervical and spine-related issues in the youngsters of Gen Z and upcoming generations, the nature (complementary/contradictory) of the interplay between digital and emotional skills in individuals is assessed and reported. Digital advancements are supportive tools that make life easier and interesting. But, it is to be noted that individuals should take necessary efforts consciously to strike a balance and mastery over these skills. Left uncared for, things are made more complicated. There's this phenomenon called "digital care intensification", which basically means, all these apps and systems for managing family life actually create more mental work, not less. Users tend to constantly check schedules, coordinate pickups, and manage appointments through different platforms. It's exhausting for both men and women in the family, but the social norm of women being mandated to shoulder additional caregiving responsibilities is worrisome. The couples studied showed something important, though. When employers actually support their employees as whole person, not just workers and when families are intentional about adopting a personalised design for resource management, things can work much better. What really matters is the individual's attitude towards family and workplace culture, giving due importance to each little process and the progress, rather than making anxious efforts about the end result. This isn't just about individual families struggling to get by. It is about making the best use of the resources to sustain the increasing needs of the economy.

The study reveals the need for better policies, better support systems, and better conversations about what equality really looks like in practice. The bottom line is that technology can help us create more fair arrangements at home and work, but only if individuals are smart about its usage and honest about the problems they are trying to solve.

Exploring Academic Facilities, Skill Acquisition, and Career Choices by Higher Education Students in India: A Case Study of Central University of Tamil Nadu

Sankar Rao Chirala Associate Professor, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

Anagha L Master's Student, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

Fathimathul Juvairiya P. V. Master's Student, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

Dhatchina A Master's Student, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

Niranjana Hari Master's Student, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

This study attempts to explore the academic facilities, skill acquisition and career choices by the higher education students across disciplines in Central University of Tamil Nadu (CUTN) which is an emerging new central university in India. It is based on primary data, collected through a filed survey from 183 sample students, selected based on stratified random sampling technique from various disciplines during academic year 2024-25. The data are collected though a structured questionnaire and the perception-based questions are collected on 5-point Likert scale. Basic statistics and tabulation techniques are adopted to analyse the data. The result show that the young CUTN with higher female student ratio and relatively low diversity provides higher education to majorly students from socially marginalised, first generational, agricultural background and unaffordable students to build their careers. The academic infrastructural facilities in terms of physical and digital infrastructure, faculty strength and their quality are reasonably good but with some gaps. The syllabus and education in the university is better to impart subject knowledge but with some gaps in case of soft skills and job skills. Despite of better academic facilities and subject knowledge, the career choice made by the higher educated students in CUTN still reflect the general tendency of Indian youth who give more preference for more secured, risk less and powerful government jobs and less preference for risky entrepreneurship and less paid non-profit and social service occupations.

Amidst of these, there is a significant preference for academics and research, and private sector careers. These career choices are mostly influenced by passion for the field, followed by salary package, job security, and work-life balance but less influenced by social impact. The internship and placements opportunities in the university majorly remain average which is a major concern. Students expect more of enabling support from the university like well-functioning internship and placements cell, industry collaborations, entrepreneurship guidance and research funding rather than other direct supports for their career planning. Broadly the disciplines of basic sciences and life sciences which have relatively better academic facilities provide relatively better knowledge and skills than arts and languages, and professional courses like economics, management, commerce etc.

The specific suggestions by the study include: fill up the gaps in providing academic infrastructural facilities in university especially for professional courses and arts & languages; prioritise the skill-based syllabus and instructions across the disciplines balancing subject knowledge; provide more scholarships and financial support to students; strengthen internship with effective industry collaboration; strengthen the career guidance and placement cell with dedicated professional expertise staff; promote and support more innovative and entrepreneurial orientation through enabling econ-system like incubation centres and start-ups; and enhance fellowship and collaborations on par with other eminent central institutes like IITs, IIMs, IISERs etc., to support careers in academics and research in the central universities.

Determinants of Female Labour Force Participation in India: An Econometric Analysis

Naresh Ghanasham Shirodkar Associate Professor, Dnyanprassarak Mandals College and Research Centre, Assagao, Assagao PO, Goa

The present study analyses the determinants of female labour force participation (FLFP) in India. The study period ranges from 1990 to 2024. The study is based on secondary data collected from the World Bank data base. The study uses regression analysis to analyse the factors influencing FLFP. The study analyses the following factors: GDP PCI (gross domestic product per capita income), fertility rate, inflation rate, urbanisation, and school tertiary enrolment ratio.

The study focuses on two objectives: 1) to study the trends in the female labour force participation in India from 1990 to 2024, and 2) to examine the determinants of the FLFP in India. The study uses regression analysis to analyse the factors influencing FLFP. The study period ranges from 1990 to 2024, and the number of observations are 35. It uses descriptive statistics and regression analysis to arrive at the result, and uses software to analyse the results.

The study uses the following variables: Dependent variable: FLPP Rate (FLFPR) Independent Variables: GDP PCI, Fertility Rate (FR), Education Enrolment Tertiary (ERT), Inflation Rate (IR), Urbanisation Rate (UR). The study reveals that FLFPR climbed gradually during the first few years of the study period, then declined, and then showed an upward tendency in the most recent years. The study revealed the following features as regards the descriptive statistics. 1) The mean value of FLFPR is 30%, whereas the maximum and minimum values are 35% and 26%, respectively. The standard deviation is 2.91. 2) The mean value of fertility rate is 2.86 children born to a women, whereas the maximum and minimum values are 4 and 1.9 children, respectively. 3) The mean value of GDP PCI is USD 1114.5, whereas the maximum and minimum values are USD 2696.0 and USD 302.9, respectively. 4) The mean value of enrolment

in tertiary education is 17.31%, whereas the maximum and minimum values are 33.0% and 6.0%, respectively. 5) The mean value of urbanisation is 30.0%, whereas the maximum and minimum values are 36.8% and 25.5%, respectively. 6) The mean value of inflation in India is 7.06%, whereas the maximum and minimum values are 13.9% and 3.3%, respectively. The study suggests that improvement in education that is, tertiary level plays a significant role in improving the FLFPR in India.

The Political Economy of Post-Work and the Redundancy Economy

Sagar Kumar PhD Scholar, Jawaharlal Nehru University, New Delhi

This paper develops redundancy as a measurable and structural condition of contemporary labour markets, and argues that it constitutes the lived reality of the post-work economy. Unlike cyclical unemployment, redundancy signals a lasting withdrawal of labour demand, eroding not only income but also social recognition and belonging. It asks the basic questions: What if some workers are not reabsorbed at all? What if certain categories of labour disappear permanently?

While theories of post-work have often remained speculative, this study grounds the debate empirically by constructing a Redundancy Index (AI), capturingâ€‹ permanent earnings scarring, long-run participation decline, and disengagement and loss of recognition. Using comparative evidence from the United States, Germany, Sweden, and the Global South, the analysis synthesises longitudinal earnings data, labour-force statistics, survey evidence on worker engagement, and ethnographic accounts of platform labour to operationalise redundancy as a quantifiable and persistent phenomenon. It draws on displacement studies to estimate scarring effects of mass layoffs, distinguishing temporary unemployment from structural redundancy. Then, it integrates cross-country comparisons of participation and disengagement. By mapping diverse data sources onto the RI framework, the paper demonstrates how redundancy persists across institutional regimes and labour-market structures.

Findings highlight three key dynamics. Firstly, redundancy differs from historical transitions: whereas earlier sectoral shifts absorbed displaced workers, today earnings scarring and participation declines are permanent, not transitional. Secondly, technological optimism about task creation underestimates redundancy, since many new roles are precarious, low-wage, or socially meaninglessâ€‹. Thirdly, even strong welfare institutions, such as those in Nordic economies, cushion shocks but do not eliminate redundancy, which endures as income loss, symbolic exclusion, and declining labour-market attachment. It situates redundancy within the political economy of post-work.

Classicals have envisioned automation as opening horizons of leisure and redistribution. In reality, post-work has arrived through redundancy: as exclusion, precarity, and eroded

recognition rather than universal emancipation. Policy responses must therefore target each dimension of the RI: wage insurance and income supports, reattachment strategies such as care economy investment, and recognition reforms, including universal basic income, shorter work weeks, or basic services.

The paper positions redundancy as both an empirical condition and a moral–political challenge, reframing the debate on post-work societies and outlining directions for further research. Recognising redundancy allows societies to confront exclusion directly and to negotiate new forms of citizenship, belonging, and dignity beyond the wage relation.

Crosscurrents: Labor and Migration in an Age of Division

Satya Bhan Yadav Professor of Economics and the Principal, Government Commerce College, Alwar, Rajasthan

This paper examines the tensions between globalism and nationalism, multilateralism and bilateralism, and democracy and autocracy, analyzing their effects on labor markets and migration. Through the lens of an Indian labor economist, it combines macro-level analysis with the "microstructure" of individual and community responses. The paper presents a novel finding that global labor mobility and local economic development can be mutually reinforcing, offering a bridge between opposing policy visions. Using India's experience as a major labor exporter and emerging economy, we discuss structural changes, policy, and legislation. The analysis leverages micro-data and field insights to argue that pragmatic policy blends, rather than ideological purity, yield the best outcomes for workers and economies.

WORKSHOP SESSION 4

Gendered Impacts of Climate Shocks on Household Consumption and Women's Nutritional Outcomes: Evidence from Rural India

Diya Desai Master's Student, Azim Premji University, Bengaluru, Karnataka

Rural livelihoods remain deeply vulnerable to climate shocks, whether farm-based or non-farm-based. Climate variability leads to consumption declines that have a differential impact depending on the primary source of household income. The impacts are disproportionate not only across households but also within them. Existing research indicates that women bear a larger burden of climate variability than men, particularly in terms of labour allocation and human capital accumulation. Climate shocks increase the need for women to devote more time to domestic chores and care work, reducing their opportunities for paid labour and, potentially, their nutritional well-being. However, little is known about the distinct impacts of climate shocks on women's nutritional outcomes in the context of rural India.

This study aims to address this gap by examining the heterogeneous effects of climate shocks on household consumption and women's health indicators. The analysis utilises two rounds of the India Human Development Survey (2004–05 and 2011–12), combined with district-level rainfall and temperature data from the Indian Meteorological Department, to study how climate shocks influence per capita consumption expenditure and women's nutritional outcomes (such as Boy Mass Index [BMI] and anaemia status). Households are classified as agricultural or non-agricultural based on their primary sources of income and landholding status. To identify the causal effects of shocks, the study will employ panel-data methods, such as household fixed effects and difference-in-differences approaches, while also conducting robustness checks with alternative specifications and, where feasible, supplementary datasets such as National Family Health Survey (NFHS) or National Sample Survey Office (NSSO) Consumer Expenditure Survey (CES).

The study makes three contributions. Firstly, it distinguishes between agricultural and non-agricultural households, highlighting how dependence on farm income mediates vulnerability to shocks. Secondly, it explores intra-household gendered effects by focusing on women's nutritional and health outcomes rather than aggregate expenditure alone. Thirdly, it situates these findings within the broader debate on rural resilience, showing how climate shocks exacerbate both inter-household and intra-household inequalities.

By linking household consumption data with climate variability and gender-disaggregated indicators, this study contributes to the emerging literature on the gendered impacts of climate change. The findings are expected to inform the design of rural safety nets, food security policies, and women-centred adaptation strategies in India.

Changing Landscape of Rural Employment in India: Insights from Periodic Labour Force Survey Data

Anwesha Saikia PhD Scholar, Dibrugarh University, Dibrugarh, Assam

This paper uses the National Sample Survey (India) data on Periodic Labour Force Survey (PLFS) to see the recent transition of employment in rural labour market in India between pre and post COVID period. It holds importance in the backdrop of the major shocks such as COVID -19 pandemic, Goods and Services Tax (GST) implementation, demonetisation, etc. Our findings highlight a scenario of structural reversal in rural India with a modest increase in the percentage share of agricultural employment from 59.40% in 2017-18 to 59.84% in 2023-24. Disaggregation of the sectors show a pronounced transition within the agricultural sector itself – transition from the "crop" sub-sector towards "animal production" as well as "mixed farming" sub-sector. Gender wise disaggregation of the employment shows that over the period of time; women are increasingly engaging themselves in agriculture as compared to their counterparts. Over time, men are mostly moving towards the construction sector. There is evidence of young people's repulsion from agriculture sector as compared to the working class; a greater proportion of working-age individuals are engaged in agriculture than youth, however, during this period, the proportion of young people working in agriculture has also grown. There is an increase in self-employment within both farm and non-farm sector. Around 70 to 80% of agriculture workers are self-employed as cultivators and this share has increased almost by 10% between 2017-18 to 2023-24. The rural non-farm sector has also observed an increase in self-employment though this increase is less than the farm sector. This research provides valuable insights into the evolving dynamics of the rural employment in India, which explores how employment patterns have shifted across different demographic segments, with a particular focus on gender and age-based differences. The analysis also considers variations in the distribution of the workforce across broad categories of employment activity, offering a comprehensive understanding of how the pandemic has impacted rural labour market transitions. This article discerns a rise in rural agricultural employment in almost in all the states of India though we can see a huge state wise variation, indicating the need to adopt state-specific programmes.

Education and Employability in Arunachal Pradesh: A Study of Literacy, Gender Gap, and Labour Force Participation

Lob sang PhD Scholar, Rajiv Gandhi University, Itanagar, Arunachal Pradesh

This study examines the relationship between education and employability in Arunachal Pradesh, by focusing on literacy, gender gap, and labour force participation. By drawing the secondary data from the Census of India (2011), Periodic Labour Force Survey (PLFS 2017-2024), the Performance Grading Index (PGI 2017-2024), and the state-level employment statistics, the paper analyse the long-term trends in literacy, gender disparity, quality of education, and labour force participation. David Sopher's Disparity Index is used to measure the extent of gender disparity in literacy and labour force participation rate. The findings of the study reveal that despite late entry into formal education, the state has made substantial progress in literacy, an increase in enrolment rate, a reduction in gender disparity, and an improvement in educational infrastructure. However, the quality of education remains poor, as reflected in poor rankings in the PGI. The low PGI ranking of the state highlights deep-rooted challenges in governance, infrastructure, and learning outcomes.

The labour market outcomes also show a mismatch between education and employability, evidenced by the rising number of marginal workers and non-workers. The proportion of main workers in the state has declined substantially, indicating a growth in unemployment. This is further supported by data from the Live Register in Employment Exchanges, where the number of job seekers has risen by 72% in just five years. The labour force participation rates show volatility, with female participation levels rising significantly but largely concentrated in subsistence agriculture and informal activities.

The study concludes that the weak educational-employment linkage in Arunachal Pradesh is not because of technological disruption, but due to the combination of structural, institutional, social, and economic factors. The study argues that the state has an immense potential to strengthen its education-employment linkage. The potential sector, including horticulture, tourism, and handicrafts, if effectively linked with education and skill training, can generate sustainable employment and strengthen the state's education-employability nexus.

Gender, Caste, and Regional Inequalities in India's Service Sector: An Empirical Study based on Periodic Labour Force Survey Data

Mainak Das PhD Scholar, University of Kalyani, Kalyani, West Bengal
Anupam Hazra Assistant Professor, University of Kalyani, Kalyani, West Bengal

The trajectory of India's economic development transits through its alteration of dependency from traditional sectors to modern sector. Mostly, observed in post reform period, the growth

of service sector outsmarted the growth of other conventional sectors. In recent years, the service sector has been the prime dominator of economic development, although historically the traditional sector has provided the most to India's national income; now, the service sector accounts for half of the country's overall output, however the lion share of the population is still employed in the traditional sectors. With the most appreciated expansion of the tertiary sector in India, many opportunities of employment for both genders and castes have been brought about; however, this has also attracted attention to the ongoing problems of gender and caste inequality in the workforce. India is a secular nation, distinguished by its comprehensive inclusion of all castes, creeds, traditions, and civilisations; different cultures and norms are posited in different parts of the country, differing in degrees of women's economic engagement and changing views on gender roles.

The study focuses on the long contention over discriminating between re-served and unreserved castes, gender distribution and regional disparities of service industries in India taking data from the Periodic Labour Force Survey (PLFS 2023–24). The study aims in understanding the contributions of cultural, economic, and institutional variables in influencing the involvement of reserved and unreserved particulars in various sectors besides geographical differences across the country. The results from the descriptive part discusses trends and inequalities of the socioeconomic setting in India and to examine how well the service industry sufficed the factors like inequality in income, age group, education levels and other socioeconomic factors of a vast number of states or areas in gender dis-aggregated level, logistic regression model is considered. Furthermore, to draw a concluding remark on the caste debate, a linear decomposition is performed.

Explaining the Increasing Trends of Female Participation in Indian Labour Market: A State Level Analysis

Vinay Kumar PhD Scholar, Banaras Hindu University, Varanasi, Uttar Pradesh

The dynamics of India's labour market have undergone notable transformations over time, with a distinct shift emerging in female labour force participation (FLFP) since 2017–18. Historically, FLFP had been on a declining trajectory, raising concerns about gender disparities in labour market engagement and economic growth. However, data from the Periodic Labour Force Surveys (PLFS) indicate a clear reversal of this trend, with female participation showing a significant increase in recent years. This study investigates the upward trend in FLFP between 2017–18 and 2022–23, emphasising variations across states, social groups, sectors, and types of economic activity. Drawing on nationally representative data from the PLFS conducted by the National Sample Survey (NSS), the study employs descriptive statistics to map participation patterns and workforce distribution among women, alongside a binary logistic regression model to analyse determinants of female participation in the agricultural sector.

The results reveal a marked 17.9% increase in FLFP over this period, considerably higher than the 6.5% growth recorded among men, with rural areas demonstrating the most substantial gains. This surge highlights the shifting dynamics of rural labour markets and the increasing role of women in economic activity, particularly in informal and subsistence-based employment. Social group disaggregation shows that scheduled tribe (ST) women maintain the highest levels of participation, with their work force participation rate (WFPR) rising sharply from 37.76% in 2017–18 to 62.69% in 2022–23. Regional analysis indicates pronounced heterogeneity: northeastern states such as Arunachal Pradesh (28.84%) and Nagaland (22.89%) recorded the most significant increases in WFPR, whereas states such as Manipur (2.76%) and Tamil Nadu (3.3%) experienced only marginal growth.

A critical finding is that nearly half of working women are engaged in unpaid family labour, reflecting persistent gendered patterns of work and the undervaluation of women's economic contributions. The regression analysis identifies key factors influencing female participation in agriculture. Women with higher education levels and those employed in non-agricultural sectors are significantly less likely to participate in agriculture, underscoring a gradual occupational shift away from traditional farm-based work. Conversely, older age groups demonstrate a higher probability of agricultural involvement, reflecting generational disparities in employment opportunities and labour market transitions.

Conditions of Workers in the Garment Industry and the Role of Trade Unions: A Study of the Garment Industry in Delhi-NCR

Vijay . PhD Scholar, Ambedkar University, New Delhi

Garment manufacturing in India is located in clusters such as Tirupur, Ludhiana, Bangalore, Mumbai, Kolkata, Jaipur, Indore, and Delhi-NCR (National Capital Region) — The NCR includes cities such as Delhi, Noida, Gurugram etc. It has emerged since mid-1980s as the major site for production and exports of readymade garments. Although, there are major differences between various garment producing areas in India, particularly in terms of product specialisation, the size and kind of capital operating in the area, the kind of workforce, the size of production units, and how the workforce is employed, etc. Though much of the manufacture of garments is located in south India, the Delhi-NCR has a sizeable garment industry, where according to one estimate 4 to 5 lakh workers are employed. Here, with a relatively smaller registered or formal portion, and a larger unregistered or informal portion, most of the work is export oriented. The informal part also covers many such manufacturers who for operating several machines will ideally qualify for registration under the Factories Act. On one hand, a complex network of small units and fragmented manufacturing process characterise this industry. On the other side, there is little unionisation in the industry and wages are more often than not below the minimum wage level. Moreover, women workers, who actually comprise some 40% of the total workforce in this industry, are the most exploited lot. However, no systematic study

of the living and working conditions of the Delhi-NCR garment industry workers has been carried out thus far.

The proposed study makes an attempt to analyse the living and working conditions of the garment industry workers in the Delhi-NCR. It is also designed to understand the role of workers' organisations or the relevance of the trade union movement among the garment industry workers of the Delhi-NCR in the changing times.

Migration and Formal Insurance Uptake: Rural-Urban Disparities and Determinants

Sohini Mazumder Assistant Professor, Sister Nivedita University, Kolkata, West Bengal, Academic Coordinator of Economics

To mitigate unforeseen contingencies and absorb economic or social shocks, individuals typically participate in a mix of formal mechanisms such as insurance markets and informal arrangements such as kinship ties, neighbourhood associations, or broader social networks of communal support. The literature recognises that while formal insurance provides contractual and legally enforceable protection, informal arrangements often rely on trust, reciprocity, and repeated interactions within a community. In this context, our study examines whether one's migrant status influences the adoption of formal insurance, while holding other socioeconomic and demographic considerations constant. Migrants are a particularly relevant group to study, as they often face distinctive vulnerabilities that may shape their reliance on either formal or informal risk-sharing institutions. We extend the existing discussion by suggesting that migrants, especially in the early phases of relocation, may rely more heavily on formal insurance because of delays and hurdles in integrating into local support networks. Unlike natives, whose communal ties are longstanding and resilient, migrants may encounter barriers of language, culture, or trust, which limit the immediate effectiveness of reciprocity-based systems. At the same time, the very decision to migrate, frequently motivated by the pursuit of higher incomes, can reduce the perceived benefits of informal networks.

Reciprocity-based arrangements are often most effective in relatively homogeneous, low-income groups where contributions and benefits are symmetric. For higher-income migrants, participating in such networks may involve disproportionately large contributions with relatively low expected returns. In addition, we suggest an alternate channel of influence. Migrating for wealth creation can generate an income effect, whereby the increased financial capacity allows migrants to replace reciprocity-based networks with the superior guarantees of formal insurance.

Our empirical findings highlight these dynamics. In the rural sector, migration is associated with a negative and statistically significant relationship with formal insurance uptake, possibly

reflecting stronger community enforcement of informal networks. In the urban sector, however, we observe a small but significantly positive effect, suggesting that migrants may increasingly turn to formal insurance when their integration into urban networks is slower or less certain.

Tourism-Led Rural Transformation: Examining Uttarakhand's Homestay Scheme

Taniya Sah Assistant Professor, Vidyashilp University, Bengaluru, Karnataka

Uttarakhand's hill economy has long been characterised by agrarian distress, widespread male out-migration, and limited non-farm employment opportunities. In 2018, the state government launched the Deendayal Upadhyay Homestay Scheme to harness tourism as a tool for rural livelihood diversification. The scheme provides subsidies, credit support, training, and digital marketing platforms to encourage households to convert parts of their homes into certified homestays. It is expected to generate employment, curb migration, and preserve local culture.

This paper examines how the scheme is experienced on the ground, with particular attention to issues of gender, migration, and inclusivity. The study draws on qualitative fieldwork in Ramgarh (Nainital) and Ranikhet (Almora), including 30 semi-structured interviews and focus group discussions with homestay owners, farmers, and return migrants. The findings suggest that while homestays have created important avenues for supplementary income, they remain seasonal and modest in scale, functioning largely as complements to agriculture or pensions. The scheme has also encouraged some return migration, particularly among younger residents and COVID-19 returnees, who view homestays as a way to reimagine life in the hills. However, benefits are unevenly distributed, with better-off households—those with larger homes, road access, and digital literacy—more able to participate successfully.

The research highlights gendered exclusions: women manage most day-to-day operations but are rarely recognised as registered owners or beneficiaries, reflecting broader patterns of invisibilised female labour in rural India. Bureaucratic procedures, digital requirements, and safety concerns further limit women's direct engagement. In addition, poorer and more remote households face barriers in accessing subsidies and attracting tourists, raising concerns about intra-rural inequality.

The paper argues that while the homestay scheme holds considerable potential for inclusive rural development, its transformative impact depends on addressing these structural constraints. A more gender-responsive, facilitative, and community-oriented approach is necessary if homestays are to evolve into an equitable source of rural employment and social empowerment in Uttarakhand.

Remittances Taxes and H1B Visas: Revisiting the Brain Drain Debate

S Krishnakumar Associate Professor, Sri Venkateswara College, University of Delhi, Delhi

In the Big Beautiful Bill, President Trump had clauses relating to a remittances tax proposed originally at 5%. Though later it was watered-down, the proposed tax was over and above the remittances levy charged by the service providers in this regard. This raises an important issue for the remittances receiving countries in the world and in particular for labour surplus economies of the world. Even when there has been a drastic reduction in the restrictions on the mobility of capital, the restrictions with respect to the mobility of labour have been an important matter of concern for the developing world. They remain unaddressed despite the development dimensions of the same and the impact of the same on the balance of payments of a number of developing economies. The discussions with respect to Mode IV has never received the priority it ought to. On the contrary, there has been efforts to restrict the issuance of H1B visas despite no evidence that the H1B wages were growing at a lower rate compared to the others. The proposed remittances tax also needs to be seen in the light of the Sustainable Development Goal (SDG) 17 that has been prioritising on the reduction of the remittances costs towards reaching the larger common goals of humanity.

The proposed remittances tax also forces us to revisit an old debate on brain drain which was triggered by Bhagwati who argued that the capital value equivalent on account of the migration of professional, technical, and kindred workers was far too high as against the aid and assistance flowing to the developing world. Though nothing worked on the brain drain tax front, the importance of advanced country contributions from 0.7% to 1.0% of the gross domestic product (GDP) as part of the New International Economic Order was raised. Further down, there have been empirical models of labour migration which have been emphasising on the brain gain aspects over the brain drain aspects. This paper aim to do an empirical exploration about the issue from a developing world perspective in the light of the data relating to H1B visas.

Return to Work? Dynamics of Female Employment: A Caste Perspective in India (2004-05 to 2023-24)

Ankita . PhD Scholar, Central University of Himachal Pradesh, Kangra, Himachal Pradesh

Gender and caste discrimination have been major obstacles that have prevented women from gaining employment in the Indian labour market. This study examines the trends and patterns of female employment in the Indian labour market from a caste perspective for the period 2004-05 to 2023-24. Focusing on the recent increase in the female workforce, it also examines the employment quality of women workers across castes. This study utilises data from the National Sample Survey Office's Employment–Unemployment Surveys (61st round, 2004–05;

and 68th round, 2011–12), along with the Periodic Labour Force Survey (PLFS) for the period 2017–18 to 2023–24. In this analysis, the sample consists of individuals in the workforce aged 15 to 59 years.

The results show that female workforce participation across caste groups declined between 2004-05 and 2017-18. However, increased over the past six years. With significant variations across caste groups, women belonging to Scheduled Tribes (STs) have the highest participation, followed by Scheduled Castes (SCs), Other Backwards Classes (OBCs), and the lowest among the forward caste categories. Similar results were observed for female participation in paid work across castes. However, the female participation in paid work is less than the female workforce participation. It suggests that a large number of female workers come as unpaid family helpers, mainly among the deprived caste categories.

The female workers have experienced an increase in self-employment and a decline in regular salaried work from 2017-18 to 2023-24 across social groups. In 2023-24, OBC and ST women recorded the highest self-employment participation rates, while SC women experienced the steepest recovery and lowest workforce participation. Regular salaried work for women rose significantly between 2004-05 and 2017-18, particularly among the forward caste.

These findings suggest that the recent increase in female workforce participation is largely a result of economic distress and the lack of access to better-quality employment opportunities, rather than a reflection of empowerment or genuine socioeconomic progress. These findings also suggest that high female workforce participation from marginalised castes is primarily due to economic hardship or distress-driven, which compels them to enter the labour market, and not because of progressive gender or social norms, but economic necessities, making the gender norms less restrictive. Women belonging to marginalised communities are shifting away from regular salaried work and casual labour work towards self-employment. While males from these communities experience a smaller increase in self-employment. Despite the low workforce participation of women belonging to the forward caste, their engagement in regular salaried work is high compared to marginalised caste categories linked to gender norms, such as the emphasis on economic stability and status maintenance, which support women's exclusion from the workforce and shape their careers against gender and caste. This difference reveals how the intersection of caste and gender continues to shape women's economic status in contemporary India.

How Discrimination in the Labour Market Influence Trade in Global Value Chains: A General Equilibrium Approach

Siddhant Mukherjee PhD Scholar, Ashoka University, Sonipat, Haryana

Sushobhan Mahata PhD Scholar, University of Calcutta, Kolkata, West Bengal

Avishek Bose PhD Scholar, St. Xavier's College (Autonomous), Kolkata, West Bengal

The paper attempts to revisit the extant body of work on how perfect competition helps in driving out discrimination through a general equilibrium lens. The findings are significant in the sense that, while assuming standard narratives, in an economy with both discriminating and non-discriminating sectors it is the latter that is forced to vanish. The paper, using a multi-sector model of the economy, carefully examines the various inter-linkages and how they in turn influence the disappearance of sectors. The paper introduces the idea of an emerging sector and its role in reducing dependence on backward GVC. Findings indicate that the arrival of the emerging sector with modified inter-linkages prevents either sector from vanishing and how this influences the overall welfare in the economy. The formal specification and theorisation of vanishing sector was first attempted by Beladi et al. (2016), which defines it as a phenomenon of disappearance of certain sectors in an economy amidst large exogenous shock causing finite change in the production structure. However, the idea of vanishing sector in trade theory was hidden in the notion of complete specialisation in Ricardo (1821). Its extension for a small open economy could be found in Jones (1974), nonetheless, without the explicit mention of vanishing sector.

We put forward the idea of an emerging sector and explore its role in reducing reliance on backward global value chains (GVCs). This idea draws inspiration from real-world policy efforts—for example, India's Make in India programme, which focuses on strengthening domestic industries and creating jobs for young workers. Our model shows that when such an emerging sector is introduced, and when its connections with the rest of the economy are carefully structured, the problem of "vanishing sectors" can be avoided. In fact, we find that these new inter-linkages prevent either the discriminating or non-discriminating sector from disappearing. The creation and nurturing of emerging domestic sectors can offset these risks, ensuring that the gains from reduced wage inequality are more broadly shared without undermining economic diversity.

Female Labour Force Participation in the Indian States: A Cross-Sectional Analysis

Samparna Mittra Master's Student, Indian Statistical Institute, Kolkata, West Bengal

Rahul R Master's Student, Indian Statistical Institute, Kolkata, West Bengal

Despite sustained gains in female education and rising household incomes, India's female labour force participation rate (FLFPR) remains anomalously low relative to other lower-middle-

income countries. This paper examines state-level variations in FLFPR through a cross-sectional regression framework and identifies a novel N-shaped relationship between female labour force participation and a composite development index incorporating income, education, and human development. The unique N-shaped curve we obtain, emphasises that FLFPR in the Indian context first rises from an extremely low level, reaches a peak, then begins to decline to a trough which is higher than the initial low level, and then finally begins to rise again. Unlike the U-shaped trajectory hypothesised by Goldin (1994), which presumes a decline and subsequent rise in participation as economies develop, the N-shaped pattern we uncover reflects India's exceptionally low baseline of socio-economic development, where many states have yet to attain the threshold required for the conventional U-shape to emerge. This finding is both theoretically and empirically significant: while prior research on India and other developing economies has produced inconclusive evidence regarding the U-shaped hypothesis, our identification of an N-shaped curve provides a more robust and contextually grounded curvilinear explanation, validated using both parametric and non-parametric analyses. Beyond this central contribution, we investigate structural and institutional determinants of female labour participation and show that persistent dependence on agriculture, entrenched social norms, specifically female mortality and marital norms, high levels of crimes against women, and limited access to finance, technology, and digital infrastructure further depresses FLFPR. Indian females are also overwhelmingly represented in agricultural and informal sectors. Taken together, these results underscore that India's female labour market dynamics cannot be adequately captured by conventional development narratives. The N-shaped curve we document reflects both the promise and barriers of India's current development stage, offering new insights into the situation of gendered outcomes of the Indian labour market.

Parochial Lords and Stateless Barons: Status Paradox in Indian Districts

Kartik Chopra Master's Student, Gokhale Institute of Politics and Economics, Pune, Maharashtra

This paper documents and maps a salient "wealth paradox" across India's districts by comparing two principal-component-based household wealth indices derived from NFHS-5 (2019– 21): a national index and a within-state index. We compute district mean scores from household Principal Component Analysis (PCA) factor values and convert these means into percentiles in two reference frames to identify two clusters: (i) "Regionally Rich & Nationally Poor" — districts ranking among the top 30% within their state but below the national median; and (ii) "Nationally Rich & Regionally Poor" — districts ranking among the top 30% nationally but below their state median, respectively. Using GIS-based maps, we map spatial distributions that neither index alone reveals. The analysis estimates Ordinary Least Squares (OLS) models with robust standard errors to examine structural determinants, relating classification into either cluster to district characteristics: urbanisation share, Hindu share, Scheduled Caste (SC) share, and a caste-diversity index.

Results indicate that greater urbanisation substantially reduces the probability of being assigned to either paradoxical cluster. At the same time, a larger SC share increases the likelihood that national affluence coincides with regional disadvantage. Associations for Hindu share and caste diversity are weaker and imprecise, and models exhibit modest explanatory power, reflecting the exploratory intent and the limited covariate set. The paper cautions against overreliance on a single reference index for geographic targeting: category misclassification risks misdirecting resources and reinforcing inequalities.

We recommend prioritising broad-based urban and economic development before deploying granular categorical targeting — a "development first, classification later" approach — to reduce structural constraints that distort wealth measurement across spatial scales. By combining multi-level spatial wealth measures, GIS mapping, and contextual regression analysis, our study underscores the need for continuous, cross-scale measurement, and attention to local social structure to design more equitable targeting and allocation policies. State-wise appendices supplement the paper, listing districts in each state and providing policy recommendations to guide targeting, along with suggested areas for further research on measurement, implementation, and evaluation.

A Bibliometric Analysis of the Migrant Workers' Literature

Chetan Kumar Sharma PhD Scholar, Himachal Pradesh University, Shimla, Himachal Pradesh

Dharam Pal Assistant Professor, Centre for Distance and Online Education (CDOE), Himachal Pradesh University, Shimla, Himachal Pradesh

This study analyses 25 years (2000–2025) of academic literature on migrant workers (MWS) using the Scopus database, applying both performance analysis and science mapping. An initial pool of 24,827 records was refined to 13,884 after applying inclusion and exclusion criteria. Findings show a steady annual growth rate of 5.74%, with a marked rise in publications in the post-pandemic period. The average document age was 8.68 years, with 15.42 citations per paper. Bradford's Law was confirmed, indicating the concentration of publications in a few core journals. The Journal of Ethnic and Migration Studies emerged as the most prolific outlet, while two Indian journals, Economic and Political Weekly (EPW) and the Indian Journal of Labour Economics (IJLE), were ranked among the top 20. Research output is dominated by the USA and the UK, with China emerging as a major Asian contributor. VOSviewer co-occurrence analysis identified six thematic clusters, where Cluster 1 (Green) addresses immigration, citizenship, and labour market integration in developed countries. Cluster 2 (Yellow) focuses on human capital, remittances, return migration, and socioeconomic impacts of crises such as COVID-19, with China, India, and Vietnam as key contexts. Cluster 3 (Blue) highlights migrant rights, exploitation, and policy challenges in Asian migration corridors. Cluster 4 (Red) links migration with health vulnerabilities during pandemics. Cluster 5 (Pink) underscores gendered precarity in agriculture and domestic work, while Cluster 6 (Teal) examines discrimination, racism, and intersectionality in shaping migrant experiences.

The temporal analysis shows that before 2016, research was centred on broad themes such as globalisation, immigration policy, and trade unions. Between 2017 and 2018, attention shifted towards labour migration, integration, gender, refugees, and regional dynamics in countries such as India, Malaysia, and the Philippines. From 2018 onwards, studies increasingly emphasised health issues (both mental and occupational), vulnerabilities like exploitation and precarity, and crisis-driven topics, particularly the impact of COVID-19. The strategic diagram further classifies themes across four quadrants. Labour Migration, Rights, and Global Mobility (Quadrant I) emerges as the strongest motor theme, being both well-developed and well-connected. Immigration, Labour Market Integration and Social Issues (Quadrant II) represents a niche but mature area, showing strong internal cohesion but weaker links to other themes. Occupational Health of Immigrant Workers (Quadrant III) remains underexplored, with limited development and minimal connectivity. Finally, Migrant Workers, Health, and Pandemic-Related Challenges (Quadrant IV) functions as a basic, cross-cutting theme, strongly connected to wider debates yet lacking deeper theoretical refinement.

Exploring the Scope of Collectivisation in Platform Work

Prakriti Sharma Sr. Research Associate, IWWAGE, New Delhi, Research Manager

Anjali S Research Associate, IWWAGE, New Delhi

Vidhi Singh Research Associate, IWWAGE, New Delhi, New Delhi

Aneek Chowdhury Research Associate, IWWAGE, New Delhi

The rapid expansion of platform-based work in India has reconfigured traditional labour relations, creating both opportunities and challenges for workers situated at the margins of the formal economy. Platform work offers new avenues for income generation and a degree of flexibility that attracts diverse groups of workers. At the same time, it entrenches precariousness, informality, and exclusion from institutional protections. Within this context, the question of collectivisation among platform workers has become increasingly urgent, even as it remains highly constrained.

This paper examines how the features of the platform work shape the participation of workers in collective action. The research draws from secondary research and synthesises existing literature and evidence on workers across service-oriented sectors. It follows a systematic review approach wherein relevant academic papers, policy reports, and working papers were identified through searches across databases. The inclusion criteria focused on literature published in the past two decades that examined platform labour, collectivisation, and gendered dimensions of work, with priority given to studies focusing on India or comparable Global South contexts. Exclusion criteria ruled out literature that engaged with digital platforms outside the labour economy or that lacked empirical engagement with worker experiences. Selected studies were coded and thematically analysed to identify recurring patterns, sector-specific nuances, and conceptual gaps.

The analysis underscores the nature of platform-mediated work, where workers frequently operate in isolation, whether in private homes or public spaces, without routine interaction with peers or intermediaries, under conditions of heightened algorithmic control and strict surveillance. These dynamics limit the potential for collective organisation and solidarity, raising critical questions about the future of worker rights in platform economies. The study highlights how the digital infrastructure of platform work generates both possibilities and paradoxes for collectivisation. Virtual spaces can enable mobilisation, particularly when workers are geographically dispersed or unable to attend in-person meetings due to time or mobility constraints. However, pervasive digital surveillance, dependence on performance ratings, and opaque algorithmic management mechanisms often inhibit solidarity and discourage dissent. The looming threat of deactivation, coupled with high opportunity costs of organising, further undermines collective efforts. While these challenges apply broadly across platform workers, the paper also recognises the additional barriers faced by women. Gendered divisions of labour, care responsibilities, mobility constraints, and entrenched social norms often limit women's ability to participate in collective spaces. Consequently, women's experiences illustrate how structural inequalities intersect with platform-specific dynamics to exacerbate exclusion.

By centring all workers, the paper situates collectivisation not only as a legal or institutional issue but also as a deeply political and social process shaped by inequalities, cultural norms, and design choices embedded in platforms themselves. At the same time, it highlights women's unique challenges within this wider workforce, thereby underlining the urgent need to view collectivisation as both inclusive and gender-sensitive.