



CROSSROADS

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BOOK OF ABSTRACTS



**CENTRE FOR
DEVELOPMENT
STUDIES**

SESSIONS

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Panel 1 A. Technology, Identity and Power

Narratives of Access: Unpacking the Digital Divide in AI-Powered Agriculture through Caste, Gender, and Class in Mandya, Karnataka

Gayathri Krishna, Christ (Deemed to be university)

Artificial intelligence is gaining momentum as a way to make Indian agriculture more modern and scientific. However, when AI tools are integrated into the livelihoods of farmers, they often ignore the deep-rooted social differences existing in the socio-economic realm. This study examines how caste, class and gender affect smallholder farmers' ability to access and adopt digital agriculture in the Mandya district of Karnataka. We explore these intersectionalities using a qualitative approach, which allows us to understand the lived experience of digital engagement through semi-structured interviews with the farmers. Findings reveal that digital agricultural access remains uneven, with constraints disproportionately affecting those at the margins. Caste hierarchies influence the flow of information, and gendered norms restrict women's agency to engage with digital technologies meaningfully. Thus, AI in agriculture may reinforce the existing inequalities rather than disrupt them if the social structures are not considered during the design and implementation of digital platforms. Future research should focus on bottom-up frameworks, prioritising contextualised needs, knowledge and agency of the marginalised communities.

Gendered Ethics and AI Engagement: The Mediating Role of Moral Perception in ChatGPT Use

Kirti Ranjan, CESP, JNU

Objectives: The study aims to investigate gender differences in perceptions of ethical risk, governance, and actions associated with the use of ChatGPT, and to examine how these ethical perceptions influence ChatGPT usage behaviour.
Methodology: The analysis draws on data from the Global ChatGPT Student

Survey (2024), comprising responses from 16,010 ChatGPT users across 137 countries. Three composite indices—(i) Ethical Risk (e.g., concerns about privacy, misinformation, and academic dishonesty), (ii) Ethical Governance (e.g., support for institutional or regulatory interventions), and (iii) Ethical Action (e.g., individual ethical engagement and responsibility)—were constructed by aggregating relevant survey items. Multivariate Logistic regression models were employed to examine gender differences in ethical perceptions. Subsequently, a Structural Equation Model (SEM) was estimated to test whether perceived ethical risk mediates the effect of gender on ChatGPT use frequency.

Results: Logistic regression results indicate that female respondents exhibit higher predicted probabilities than males by 4.7 percentage points for Ethical Risk, 7.7 percentage points for Ethical Governance, and 3.9 percentage points for Ethical Action, controlling for all other variables. The gender gap is most pronounced in perceptions related to ethical governance and ethical risk. SEM results indicate that women's higher perception of ethical risk partially explains their lower engagement with ChatGPT, suggesting that ethical sensitivity acts as a behavioural constraint in technology adoption.

Queering the Campus: Queer Students, Campus Politics and Everyday Resistance

Pallavi Pradhan, University of Delhi

Public universities in India are not merely sites of knowledge production but they also contribute to socialisation, identity formation and belonging. For queer students, the campus represents a crucial site of escape from the restrictive heteronormative domains of their family and school environments. However, institutional practices reproduce crisis of belonging and recognition by regulating gender and sexuality, turning campuses into spaces where queer students often face harassment, microaggression and administrative neglect, thereby invisibilising their gender identity. This study examines the struggles for gender-

inclusive reforms led by queer collectives in the University of Delhi, focusing on their role in reimagining and reclaiming campus spaces. Their demands for institutional recognition, gender-neutral spaces and preferred gender pronouns are met with resistance from both university authorities and student groups seeking to maintain status-quo. In the absence of any formally recognized support group on campus, these collectives serve as de-facto support networks of solidarity and resistance. Drawing from critical pedagogy and decolonial perspective, this paper interrogates how universities, through formal and informal norms, exclude students belonging to sexual minorities and sustain exclusionary practices which attempt to silence queer voices. Through in-depth interviews with students who are members of these collectives, it analyses how queer student activism challenges this crisis of exclusion, offering possibilities for transforming universities into more ‘inclusive’ spaces. The queer collectives not only function as essential support systems but also cultivates solidarities of love and care that challenge institutional inertia and advocate for queer-affirming spaces.

Panel 1 B Firm Dynamics and Performance

Pricing, Technology, and Enforcement in Markets with Digital Piracy: A Hotelling Approach.

Abhijeet, Indira Gandhi Institute of Development Research

We analyze the strategic interaction between an original content provider and a pirate firm in a spatial Hotelling framework. The model accounts for technological difficulty and probabilistic enforcement as determinants of consumer adoption and firm profits. Under uniform distributions, we derive closed-form equilibrium prices, technological effort, and market shares. Comparative statics reveal how enforcement intensity, technological barriers, and pirate revenue parameters shape equilibrium outcomes. While the original and pirate firms are pure substitutes in market share, their pricing and technological

strategies display strategic complementarities. The results clarify how regulatory interventions and technological investments influence market power and profitability. By combining analytical tractability with flexible specifications for pirate costs and revenues, the framework provides clear insights for policymakers and managers addressing digital piracy.

Does profitability drive investment in India's unorganised manufacturing industries?

Md Nasir Khurshid, Indian Institute of Technology Guwahati

The unorganised manufacturing sector constitutes a significant part of India's industrial landscape. It employs a large share of the country's workforce and produces a sizable output, particularly in labour-intensive activities. Despite its importance, the sector often faces constraints such as low productivity, outdated technology and limited access to credit. In this context, the study of investment becomes particularly important, as investment is central to enhancing productive capacity, facilitating technological upgrading, and sustaining long-term growth. Based on this motivation, the present study empirically examines how rate of profit and its components - profit-share and output-capital ratio - drive investment in India's unorganized manufacturing sector during 2000-01 to 2023-24. A higher profit rate signals strong profitability and higher expected returns on capital, which in turn encourages firms to expand capacity or modernize equipment. The profit share influences investment primarily through the internal financing channel. A higher profit share implies a larger portion of income retained by firms, which increases their retained earnings and potential for reinvestment. Finally, the output-capital ratio represents technological efficiency or capital productivity. An improvement in this ratio indicates technological progress, allowing firms to produce more output with the same capital stock. Using pooled data covering seven rounds of NSSO enterprise survey, our estimates found that profitability and its components have a positive impact on rate of investment in

Indian unorganized manufacturing industries. However, we contend that that a possible reverse causal relationship may exist between profit-share, output-capital ratio and investment, which can lead to problem of endogeneity. To address this issue of endogeneity, we employ instrumental variable two stage least square (IV 2sls) estimation method. Our IV 2sls estimates, while controlling for firm-level characteristics, indicate that both profit-share and output-capital ratio are positively and significantly associated with investment. These findings strongly support our central hypothesis that investment decisions in the manufacturing sector are fundamentally driven by profitability considerations. We also found our results robust to alternative specifications.

Restrictive Servicification and Skill Upgradation-A Firm Level Analysis from India

Vanashree Rawat, Indian Institute of Management Raipur

The economic literature emphasizes the role of services in stimulating economic growth and development. Recent estimates from the WTO (2024) highlight that services contribute 67 per cent of global economic growth. This rising role of services in global trade can be attributed to the increasing use of services as inputs in the manufacturing process, also referred to as servicification in the literature (Lodefalk, 2010; Elms & Low, 2013). In this regard use of services as inputs has key implications for firm performance. Notably, studies document that servicification results in productivity improvement for manufacturing firms (Hing & Thangavelu, 2023; Goldar, 2019), increased profitability (Mastrogiacomo et al., 2017), higher export participation, and integration in global value chains (GVCs) (Lodefalk, 2017; Reddy et al., 2023). However, the last decade has also witnessed a rise in services trade restrictiveness, which in turn affects the availability, accessibility, and quality of services inputs essential for manufacturing production (Benz & Jaax 2022; Baldwin 2015; Hoekman & Shepherd 2015) . While the extant and burgeoning literature on servicification

has emphasized its implications for various measures of firm performance, the effect of restrictive servicification on skill upgradation - a critical dimension of firm performance remains underexplored. In this context, this study fills this gap by addressing the question of how restriction on services used as inputs, i.e., restrictiveness of servicification, impacts the firms' skill upgradation. Our study empirically investigates this nexus for the case of India, which stands as the second-highest developing economy. India presents itself as an interesting case for exploring this nexus since it possesses a wide and diverse pool of labour market, combined with crucial role of foreign services in enabling the country to move toward sophisticated manufacturing production capabilities. However, the share of services import is low as compared to its Asian counterparts, affecting its ability to perform in the global market (Goldar et.al 2017). Thus, the liberalization of servicification offers developing countries a potential opportunity to move up in the regional and global value chains (Low, 2013). We also explore how the different forms of services inputs to examine the heterogeneous effect of services on skill upgradation. At last, we investigate how firms heterogeneity in size, trade integration, response to non-trade distortions like labour regulations, state support schemes and government effectiveness alters the impact of restrictive servicification on skill upgrading.

Panel 2. A. Development and Vulnerability

(Re)Mapping Development from the Margin: A Study of Sand Quarry Workers in Changamdabi, Manipur

Md Anash Khan, Nagaland University

Large dam has always been a question of debate in the history of modern India. The building of large dam in Neoliberal India has proponents and opponents from various schools of thought. The expanding footprint of Dam in the region is causing widespread social and ecological consequences. While dominant

discourses often focus on environmental critiques the lived experiences of downstream communities remain invisible. This paper focus into the understudied impacts of Mapithel dam in Changamdabi village. Mapithel dam built on Thoubal River at Mapithel or Maphou village in Ukhrul district of Manipur has also been a contentious issue between the government and public at large. After the commencement of dam, the impact on the Thoubal River and workers in the sand quarry along the river is clearly visible. They are facing a rapid shifts towards mechanized extraction, privatization of common land. The paper explore the impacts of Mapithel dam in the working patterns of local populace, changing nature of land and work and the livelihood question of land-poor and landless workers in Changamdabi village. The state has championed the idea of neoliberal development while the public has focused more on environmental and ecological issues. The paper tries to understand the prevailing situation through theory of dispossession by Jan Breman. On the otherhand, the concerns and aspiration of the affected local population is invisible in the discourse of building large dams and the issues of development in the region. This paper explores the narrative and perspectives of sand quarry workers along the Thoubal River.

Government authority has conducted series of consultation and given compensation to the affected villages both in the upstream and downstream villages. Research has been conducted by individual researchers and organizations at the affected villages but there were some villages in the downstream of Mapithel Dam like Changamdabi village which has never been consulted or discussed. Drawing from the data collected through fieldwork in two village localities, and five quarry sites. The study analyzes the transformation of labour and property relations, unchecked extraction and ecological devastation. The study also explores the issues and challenges of workers in sand quarry along the Thoubal River, including their displacement, resilience and resistance.

The Protective Power of Connectivity: Causal Impact of Internet Exposure on Intimate Partner Violence

Sagnik Kumar Gupta, IIT Hyderabad

In this paper, we examine whether and to what extent women's exposure to the internet influences their likelihood of experiencing domestic abuse, using nationally representative data from India. We focus on three distinct forms of IPV, captured in the National Family Health Survey 2019-21 data: physical, sexual, and emotional violence, as well as an aggregated indicator capturing exposure to any form of IPV. Our study provides causal evidence by exploiting plausibly exogenous variation in district-level internet infrastructure in India, instrumented using mobile tower density, and sheds light on a critical yet under-explored dimension of the digital divide, that is, the impact of internet access on women's safety and autonomy within their homes. We find that internet exposure significantly reduces women's risk of experiencing IPV. In our preferred instrumental variable (IV) specification, internet access lowers the likelihood of physical violence by 17 percentage points (pp), sexual violence by 5 pp, emotional violence by 9 pp, and any form of IPV by 18 pp. These effects are robust across a range of specifications, trimming thresholds, and additional controls, including husband's characteristics and childhood exposure to inter-parental violence. We also find suggestive evidence that the mechanism operates through changes in women's attitudes justifying IPV, with internet access reducing the likelihood of accepting such norms by 21 pp, and these attitudinal changes are strongly associated with lower IPV risk. We also document interesting heterogeneity across social groups, wealth, area of residence and women's education. We also note considerable heterogeneity across regions of India, with robust negative effects in South, Central, Eastern, and EAG states, and weaker/insignificant estimates in parts of the North-East. Notably, the effects are more pronounced among wealthier and more educated women, while estimates for poorer and less educated women are less precise, driven in part by

larger standard errors rather than negligible effect sizes. This pattern suggests that while better-resourced women may currently be better positioned to convert digital access into safety and empowerment, the potential benefits for more marginalised women remain substantial but under-realised. From a policy perspective, this highlights the importance of not only scaling up digital infrastructure but also intentionally designing digital inclusion policies that target women at the margins, those with lower levels of education, limited mobility, and weaker bargaining power within households.

The Everyday Social and Economic Burden of Uneven Heat Exposure: Narrative from the Informal Settlement of Delhi

Nivash Prakash, Jawaharlal Nehru University, New Delhi

Across the globe, heat under climate change is killing people with greater frequency and intensity. Research showed extreme heat has already claimed more lives than any other aspect of climate change. This makes addressing heat stress a priority. The emerging research captures the increasing complexities of those on social and political edges of the cities lacking adaptive capacity. In India, where over 95% of the workforce is employed informally and unorganised without social protection, are experiencing temperatures near 50degree C. In such context, the paper studies a particular space of vulnerability in India to argue place-based inequalities intersects and exacerbates excessive heat into severe health and livelihood issue.

Based on ethnographic fieldwork conducted between the summers of 2022 and 2024 in informal settlements of Delhi, paper examines how uneven heat exposure among urban poor intersects with structural inequities to produce chronic health impacts and further deepens economic vulnerabilities. The residents' narratives, In-depth Interviews with local health professionals and ethnographic observation reveals that residents such as street vendors, construction labourers, waste pickers and restaurant helpers experience heat strain, dehydration, fainting, accidents,

blood pressure fluctuations, fever, skin infections, heat rashes and other heat-related injuries due to prolonged exposure, release of ambient temperatures and limited adaptive capacity. Moreover, the inadequate access to drinking water, shade, ventilation and secure housing exacerbates these conditions. By situating workers' experiences within broader political-economic structures, the study shows how heat stress not only harms health but also manifests as significant livelihood issue, through lost work hours/days, diminished productivity, retrenchment and additional medical and appliances (cooler, fan and AC) expenses.

The paper informs that current Heat Action Plans are underfunded, insufficiently localised, and fail to address caste, class and gender disparities that shape differential heat risks that replicates existing inequalities. As result evolving adaptation strategies of residents based on their traditional heat-managing knowledge such as certain food habits, self-organising behaviour in addressing civic amenities scarcity, and the practice of frugality, low-cost investments reveal, in words of Z.A Hamstead, embodied, precarious, and a culturally specific understanding of heat.

Finally, paper emphasises urgency of place-based, context-sensitive localised approaches to thermal governance and public health. It argues for integrating ethnographic insights into urban planning to capture the visceral experiences of those most affected, and to design mitigation that considers basic entitlements based on needs and agency of informal workers facing extreme heat. By doing this, the paper affirms that heat stress experience being shaped not only by physical location but also social and political position.

Panel 2.B. Economics of Climate Change

Economies at the Edge: A CS-ARDL Analysis of Climate Change Impacts on Coastal States in India

Geethu Paul, ISEC

Climate change poses a serious and escalating threat to socio-ecological and economic systems, and India is no exception. Ranked seventh in the Global Climate Risk Index 2021 and third in the number of natural disasters since 2000 (EM-DAT), India's vulnerability is especially pronounced in its coastal states. These regions, with their dense populations, high industrial activity, and fragile ecosystems, are highly susceptible to climate-related disruptions.

With coastal states contributing over half of the nation's GDP, their growing exposure to frequent and intense climate events, poses a significant risk to the country's overall economic health. Yet, climate change assessments concerning India have predominantly focused on national-level trends or isolated sectors, leaving a critical gap in understanding the sub-national, long-term economic consequences of climate variability across different sectors. This study seeks to address this gap by investigating the economic implications of changing climatic conditions on the overall and sectoral growth of nine Indian coastal states from 1970 to 2021.

Using the Panel Autoregressive Distributed Lag (ARDL) model, the paper analyses both short-term and long-term impacts of climate change on three major economic sectors: agriculture and allied activities, industry, and services. Climatic shifts are quantified through mean temperature and annual rainfall, while economic performance is assessed using sectoral and overall growth rates.

Findings show that climate change has a significant and negative impact, hampering economic performance across India's coastal states. These effects are evident in both the short and long term, reflecting persistent structural constraints on regional economies. As coastal states, with their urban centres, serve as

economic and demographic focal points, the results underscore the urgency of embedding more adaptive and resilient planning frameworks into economic policymaking. By linking long-term climatic trends with disaggregated economic outcomes, this study offers empirical insights that strengthen the case for integrating environmental considerations into economic governance, particularly in regions at the frontline of climate impact.

Assessment of Climate Change and Climate Vulnerability: A Geo-Spatial Analysis in India's Districts

Nathoo Bharati, Babasaheb Bhimrao Ambedkar University, Lucknow

Climate change is threatening the entire globe, and India is also heavily affected by it. The present study assesses climate vulnerability indices across India using an integrated spatial component, viz., exposure, sensitivity, and adaptive capacity. This study followed to IPCC methodology, which used an indicator approach method, large-scale data of temperature and rainfall (1951-2020), and 30 indicators on different scale which are determine to Exposure Index (EI), Sensitivity Index (SI), Adaptive Capacity Index (ACI), Potential Climate Vulnerability Index (PCVI) and Climate Vulnerability Index (CVI). The result reveals that there is regional variation in inter-districts in terms of exposure, sensitivity, and adaptive capacity. The majority districts under southern, western and central regions are highly exposed with highly sensitive, specially, Tamil Nadu, Karnataka, Andhra Pradesh Maharashtra Gujarat and Madhya Pradesh represents 0.566 to 0.759 value exposure index and 0.42 to 1.00 value of sensitivity index, which is indicating extreme variation in temperature and rainfall and adversely affecting to socioeconomic factors like wise forest areas, mean land size, net sown area and livestock. Furthermore, observed very low exposure and sensitivity in northern and north-eastern districts in India, Uttarakhand, Himachal Pradesh, Arunachal Pradesh and Assam, where the climatic fluctuations are relatively moderate. Adaptive capacity drives reverse direction to climate

vulnerability; here, southern and western districts are socio- economically highly advanced because their ACI index values vary from 0.566 to 0.759. Contrast the districts of the eastern and central belt, followed by low adaptive capacity, where ACI values vary from 0.046 to 0.226. As a result, the southern peninsula, western plateau, and drought-prone central districts have very high vulnerability (0.706–1), while the northern agro- climatic zones are dominated by low vulnerability (0.15–0.572), according to the Potential Climate Vulnerability Index (PCVI) and the composite Climate Vulnerability Index (CVI).

Fiscal Behaviour and Budget Credibility of Climate Action Plans across States of India: A dual cut-off approach

Keshav Soni, Pondicherry University

This study critically examines the credibility and efficiency of state-level climate budgets in India from 2017–18 to 2023–24, with the objective of identifying where and why subnational climate finance breaks down. Using a dual-method framework, first, Data Envelopment Analysis (DEA) under Variable Returns to Scale is employed to assess how effectively states translate budget allocations into actual expenditure. It then employs Theil's inequality coefficients and Davis's decomposition to dissect forecast errors into bias, unequal variation, and randomness in sub-national planning space. The findings reveal persistent inefficiencies across states, with underperformance concentrated in Punjab and Andhra Pradesh, while others, such as Telangana and Odisha, show greater alignment between planning and execution. Systematic bias dominates forecast error, underscoring that inefficiencies are not accidental but stem from flawed planning, institutional inertia, and political misalignments. Most importantly, the improved mid-year forecasts do not consistently translate into more effective spending. The paper provides a thorough approach for assessing subnational climate funding by connecting implementation gaps to fundamental flaws in

budget planning. It calls for performance-linked disbursements, stronger institutional coordination, localising SDGs, and real-time monitoring to improve climate fiscal governance and align state-level actions with national climate goals.

Panel 2. C. Causal Inference

Impact of “Aspirational District” Programme on school enrolment and learning outcomes of children of group 6-14 years: evidence based on ASER data

Vivek Chandra, JNU

A prevailing challenge in India’s social sector is the presence of substantial disparities between regions, genders, and social groups. The World Inequality Report (2018), for example, states that India is the second most unequal country globally. In the absence of any policy that explicitly addresses these disparities, achieving inclusive outcomes — a paramount goal for human development in education and health — will likely remain an unattainable goal. Recognising regional disparity as a hindrance to human development, the Government of India launched the “Transformation of Aspirational Districts” Programme (also known as the “Aspirational Districts” Programme) in January 2018. This programme targets districts that had hitherto made little progress on important social indicators. The “Aspirational Districts” Programme was implemented in 112 districts. The programme focuses on five key areas — namely, health and nutrition, education, agriculture and water resources, financial inclusion and skill development, and basic infrastructure.

This paper focuses on education, specifically school enrolment and learning outcomes for children in the age group 6 to 14 years. Using differences-in-difference and propensity score matching methods, this paper evaluates the “Aspirational Districts” Programme using two rounds of Annual Status of

Educational Report (ASER) data (years 2016 and 2022). We ask the following two questions: (a) Does the “Aspirational Districts” Programme have a (positive) causal impact on school enrolment and learning outcomes of children aged 6 to 14 years? (b) If a positive causal impact is detected, does this reduce the education-related gap between Aspirational and Non-aspirational Districts?

We can summarise the three principal findings of this paper as follows. (a) Over time, both Aspirational and Non-aspirational Districts experienced a decrease in the percentage of children aged 6 to 14 years who were not enrolled in school. (b) The “Aspirational Districts” programme causally reduced the percentage of children aged 6 to 14 years not enrolled in school by 0.84 percentage points. This ensured a reduction in the gap in school enrolment between Aspirational and Non-aspirational Districts. (c) However, the “Aspirational Districts” programme did not causally impact the learning outcomes of children aged 6 to 14 years.

Impact of Cash Transfers on Labor Supply Outcomes: Evidence from India.

Sonna Vikhil, Madras School of Economics

Unconditional cash transfers in agriculture have surged across India over the past decade. This study examines the impact of one such unconditional cash transfer program implemented by the Government of Telangana (India) in 2018 on labor supply outcomes, using the synthetic control method (SCM). After the intervention, Telangana reported a significant increase in the proportion of employers in agriculture, surpassing its two-decade average value. Compared with this, the estimate for Telangana based on SCM also showed a significant divergence over the period from 2019 to 2023, suggesting that the cash transfers could have contributed to the increase in the proportion of employers in agriculture. The analysis also reveals a systematic reallocation between unpaid family labor and casual wage labor, indicating changes in household labor organization and an ongoing structural transformation triggered by the intervention. Additionally, the emergence of micro-employers marks an early

stage of structural deepening in rural labor markets. The findings are validated by multiple placebo tests, reinforcing their reliability.

Can Affirmative Action Reduce Wealth Gaps? Evidence from a Natural Experiment in India

Mritunjay Kumar (Ashoka University)

Existing literature has documented the positive effects of affirmative action in improving educational attainment and employment outcomes among the targeted population. Could it also have an unintended and indirect positive effect on wealth accumulation? Using a natural experiment in India, where in 1990 job quotas were extended to a group of castes and communities collectively called “Other Backward Classes” (OBCs), we study the causal impact of caste-based reservations on asset ownership. Using a difference-in-differences design, we show that OBC quotas increased the average beneficiary group household’s wealth by INR 0.13 million, reducing the caste gap by 48 percent over 18 years. This was due to an increase in the value of real estate and financial assets. Examining underlying mechanisms, we provide suggestive evidence that the emergence of a salaried class within the targeted population is a key driver of the convergence in caste gaps in wealth. We find some evidence of effects on OBC households not directly impacted by the quotas, indicating general equilibrium effects.

Panel 2. D. Agriculture and Rural Development

Sustaining Nutri-Cereal Consumption in Rural Areas: Role of Access to Free Grains

Surabhi M (MSE)

The production and consumption of nutri-cereals (NCs), more commonly known as coarse cereals, offer significant benefits that enhance soil, human, and livestock health, yet their adoption remains limited. This study aims to investigate NC consumption in the backdrop of free grain interventions to the poor through various schemes such as Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY). Despite various promotions given to NCs, especially millets, in recent years (e.g., National Year of Millets, 2018; International Year of Millets, 2023), the NSSO's HCES 2022-23 and 2023-24 data show a decrease in NC per capita consumption and an increase in per capita rice and wheat among rural consumers who have access to free grain programs. Based on a causal evaluation framework, treated households are those who avail free rice and wheat, while the control group consists of those who do not avail free grains within the sample of major NC-consuming states. The propensity score matching technique is used to analyze the impact based on the average treatment effect on the treated, and inverse probability weighted regression adjustment is additionally used to account for potential confounding from observed covariates. The results reveal that households consuming free grains consumed 11.2 percent less NCs than the matched control group, clearly indicating NCs are substituted away by access to free grain consumption among all those households that had the habit of NC consumption. However, the treatment group gains marginally in protein intake and a larger gain in calories from rice and wheat but loses out on the micronutrient consumption from NCs, thus adversely affecting nutritional diversity. These findings underscore the urgent need for a policy shift that integrates NCs into

food security programs, thus promoting both dietary and nutritional diversity and mitigating the adverse effects of the overdependence on refined cereals.

Caste stratification and land inequality in post-reform rural India.

Gobinda Padhan Maa Manikeswari University, Kalahandi , Odisha

The amount of land ownerships determines socio-economic mobility, wealth, and social status in rural Indian. Hierarchical caste relation mirrors the ownership of wealth, especially land even in contemporary India. In this study we analyzed the recent trends of land inequality among caste groups in rural India, by decomposing overall inequality into between group, within group and the quantum of overlapping. For our study we have used secondary data sources from NSSO land and livestock holding survey of 59th and 70th round and situation assessment of agricultural households and land and livestock holdings of rural household's survey of 77th rounds for the year 2018. We used Yitzhaki decomposition method, a Gini coefficient based decompose method to decompose wealth inequality into within group and between group inequality and overlapping across the caste group. Average land holding of Others households is highest, followed by Schedule Castes (STs), Other Backward Classes (OBCs) and Schedule castes (SCs), in fact the median landholding of SCs is Zero, signifying rampant landlessness among SCs. The picture is almost similar in all the states for every caste groups, except for STs. There is no water tight stratification in land holding across the caste groups, and majority of inequality is attributed to within caste land inequality.

Impact of Crop Insurance Adoption on the Chemical Input Use in India: Evidence from Endogenous Switching Regression Framework

Aaqif Rashid Lone (IISER, Bhopal)

Crop insurance is an effective risk management mechanism against the climate risks. Reduction in production risk brings adjustments in the farmers input

decisions and influences the environmental sustainability. This paper examines how crop insurance affects chemical input usage (fertilisers and pesticides) among the agricultural households in India. Using nationally representative household survey data, we evaluated the impact of crop insurance on the chemical inputs per acre. This study uses the endogenous switching regression framework to address the selection biases originating from observable and unobservable characteristics. The major findings shows that income per acre, access to technical services and irrigated land have positive influence on the chemical input expenses but education, formal training in agriculture and crop diversification are negatively associated with chemical input usage. Moreover, the estimated impact on chemical input use shows that farmers with insurance are incurring significantly higher expenditures on chemical inputs than uninsured farmers (insured farmers would have spent 11 percent less on chemical inputs if they decided not to adopt, similarly uninsured farmers would have spent 2.7 percent more expenses if they had insured). However, the estimated impact is larger among the farmers with larger landholding, pointing to environmental harms. The findings suggest that public policy should prioritize broadly- formal training, farmer education programs, and incentives for crop diversification as integrated instruments to boost organic farming, climate smart agriculture practices and enhance environmental sustainability.

Panel 3. A. Labour Market and Outcomes

A Lopsided Bargain: Women's Employment and the Persistent Gender Gap in Unpaid Work in India

Sunny Shankar Ladkat, IIT Hyderabad

This study investigates how women's employment shapes the division of unpaid domestic labor 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 neutralization, 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 labor. 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 labor. 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.

Diverging Paths or Converging Clubs? Sectoral Labor Productivity Dynamics in Indian States

Suman Rani, BITS, Pilani Rajasthan

Improving labour productivity has been viewed as a major contributor to sustained economic growth and one of the major components of structural transformation. This study analyses the state-wise trends of labour productivity and examines its convergence dynamics by using the Phillips and Sul (2007, 2009) methodology. Drawing on state-level data spanning the period 1993–94 to 2023–24, this study analyses whether the states convergence towards a common steady point of shows a distinct pattern of convergence. The result shows that labour productivity does not converge to a steady point, rather the states conge to multiple points and make multiple clubs that exhibit heterogeneous steady levels of productivity. Furthermore, the existence of divergence clubs across the states may be attributed due to sectoral composition, intensity of investment and institutional factors. The findings underscore that productivity should be seen as a distinct trajectory rather than looking as a homogeneous group across states. Thus, this study provides valuable insights for designing region-specific growth and labour market policies.

Beyond Maternal Education: The Growing Role of Household Wealth in Determining Child Stunting in India

Tarsem Kasnia, Indian Institute of Technology Mandi

Background & objectives: Stunting is a cross-cutting problem that is highly prevalent in undernourished children and is identified as a major global health problem (Black et al., 2013). Globally 149.2 million children under the age of five are suffering from stunting (WHO & UNICEF, 2021). Despite the broad consensus that ensuring healthy living conditions requires investment in nutrition-sensitive programs to reduce malnutrition substantially (Bhutta et al., 2008) (Black et al., 2008). In this study, we tried to understand whether the

community and individual-level maternal and child factors that influenced it (Kim et al., 2019) 15 years ago are still affecting stunting or if there has been any change in its effectiveness. This study, therefore, becomes relevant as the burden of stunting remains the same, and if there is an improvement in the previously essential factors, we should turn our attention to the new factors.

Methods: We used three waves of NFHS (NFHS-3, NFHS-4, and NFHS-5) conducted by the International Institute for Population Sciences. And also tried to see the effect of these factors in children of different age groups (0 to 59, 6 to 59, 0 to 36, 6 to 23, and 12 to 23). We ran a series of logistic regression models to assess the independent and joint associations between the identified correlations and each anthropometric failure and then we calculated PAR to the risk of factor associated with Stunting.

Results: Stunting Showed a declining trend (48.0% in 2006, 38.4% in 2016, and 35.5% in 2021) from 2006 to 2021 but the mean Z-score (-3.2 in 2006, -3.0 in 2016 and -3.1 in 2021) have no change in half a decade. Short Maternal stature (OR>2.0) and Maternal education (OR>1.3) were the main factors of stunting in 2006 but in 2016 and 2021 household wealth (OR>1.4) is also playing a major role.

Interpretation & Conclusions: Over the past decade and a half, stunted children's condition has not improved. In poor families and under-literate mothers, children are more likely to suffer from several anthropological disorders, whereas wasting is a problem for all socioeconomic groups. Times are changing, and so are the factors that contribute to stunting. The quality of household air, the height of the mother, the BMI of the mother, the level of education of the mother, and the wealth of the household are all factors that need to be considered to ensure that children reach their maximum potential as they grow up

PANEL 3. B. Policy and Macroeconomics

Does Fiscal Decentralization Matter for Improving Macroeconomic Stability at Sub-National level in India?

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This paper examines the linkage between fiscal decentralization and macroeconomic stability in the form of price stability at sub-national level in India. The empirical literature on fiscal federalism presents divergent views regarding the potential risks of macroeconomic instability associated with decentralized fiscal systems. However, this research issue remains unanswered particularly in the context of emerging countries. This study fills the gap by taking India as case. Drawing on panel data from 18 Indian states over the period 2012–2021, the study assesses the effects of decentralization on inflation. The results indicate a negative and statistically significant relationship between decentralization and inflation, suggesting that greater fiscal decentralization contributes to stability. Additionally, the results also indicate that central grants exhibit a negative and statistically significant relationship with inflation which implies a higher dependence on intergovernmental grants as a primary funding source for state and local governments does not appear to undermine overall macroeconomic stability. Furthermore, political alignment between state and central governments enhances the deflationary impact of decentralization. By addressing a critical gap in the literature, this study offers empirical insights into the macroeconomic implications of decentralization in federal and developing country contexts.

How Does Tightening Patent Protection Policy Affect Welfare?

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This study shows how households' saving responses to interest rates under the general intertemporal elasticity of substitution (IES) affect the welfare

implications of patent protection policy. Savings act as a key channel linking patent protection to welfare through their role in financing research and development. However, previous studies have largely neglected this dimension of welfare analysis within the overlapping generations (OLG) framework. Using an OLG framework with the variety expansion of differentiated investment goods, we show that regardless of IES, the relationship between patent protection policy and welfare is non-monotonic and it is positive (negative) at low (complete) patent breadth. However, the stringency of the welfare-maximizing patent protection policy depends on IES, requiring a less (more) stringent policy when $IES < 1$ ($IES > 1$), relative to $IES = 1$. We then conduct empirical analysis using a cross-country panel of 48 countries from 1998 to 2017, confirming the theoretical non-monotonic relationship between patent protection policy and welfare. Our findings suggest that, governments should favor incomplete patent protection, adjusting its stringency according to households' intertemporal substitution behavior.

Fiscal Autonomy and Effects of Fiscal Rules on the Fiscal Performance of Indian States.

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This study investigates the impact of fiscal rules and tax autonomy on the fiscal performance of 16 major Indian states from 1990 to 2023, using a newly constructed panel dataset and a multi-method econometric framework. The analysis begins with fixed-effects and instrumental variables models to address potential unobserved heterogeneity and endogeneity, followed by a dynamic fixed-effects specification that accounts for the persistence of deficits. Diagnostic tests indicate that the Fiscal Rule Index (FRI) is exogenous and that several political and institutional instruments violate exclusion restrictions, confirming the dynamic fixed-effects model as the most reliable estimator. The results reveal strong persistence in state fiscal deficits, with nearly one-third of past imbalances

carrying forward into subsequent years. Fiscal rules exert a significant and negative impact on deficit ratios, and long-run estimates show that a one-point increase in the FRI reduces deficits by more than eight percentage points. Interest payments and economic size further shape fiscal outcomes, while short-term variations in transfers and non-tax revenues play limited roles.