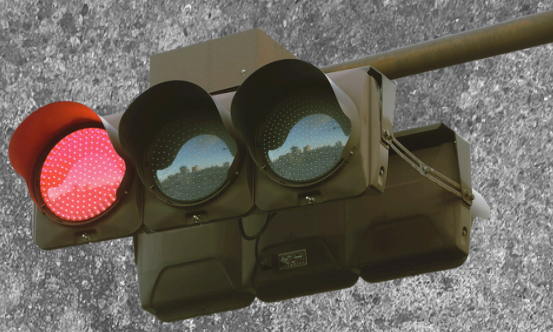

State of Finance in India Report 2024-25

In Focus: Digial Footprint in FInance & Economy

CFA Centre for Financial Accountability

erf Economic Research Foundation

Focus on the Global South

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Editorial Board:
CP Chandrashekhar, Jayati Ghosh, Shalmali Guttal, Joe Athialy, and Anirban Bhattacharya

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Introduction

Digital infrastructure

C. P. Chandrasekhar and Jayati Ghosh

This edition of the State of Finance in India report has India's digital economy and its impact as its special theme. The term 'infrastructure' conjures up images of large projects made of steel and concrete, to provide services varying from those offered by dams and power plants to those offered by roads, highways, ports and airports. But in recent years, the term 'digital infrastructure', has attracted much attention. While leveraging the hardware residing in traditional infrastructure, especially telecommunications facilities, the digital infrastructure frame is built largely with 'lighter' hardware and mainly with software that digitizes information and manipulates it to realise desired ends.

The technological components that fall within the ambit of digital infrastructure are in the nature of digital technologies, which have the ability to transform operations in preexisting sectors and industries as well as provide opportunities for the emergence of new sectors and industries. Their deployment therefore alters the way in which production, work, distribution and marketing are organized in a range of areas. In the process, they restructure economic activity in ways that raise productivity and facilitate investment and growth. This also has consequences that can intensify existing sectoral, class and gender inequalities. In some areas, that transformation can be positive. But the case that digitization is only positive and delivers increases in productivity and output through means that are clean and environmentally friendly leaves much that is unsaid. These are some of the issues examined in the report.

India has seen rapid advance of its digital infrastructure framework, assisted in its early growth by the nationwide telecommunications backbone created within the public sector. The National Telecom Policy of 1994 opened the doors to private players as a means of expanding the telecommunications network. Private participation in the wireless telephony area was allowed through auction of parcels of scarce spectrum. Sensing an opportunity, private players made bids of excessively high value based on irrational calculations of profit. When it became clear that these sunk costs could not be easily recouped, some who had established capacity incurred losses and had to exit, and others who held licences but had not installed capacity chose to sell those licences for profit.

Initially, exploiting their oligopolistic position deriving from their control over scarce spectrum, bidders turned operators set call charges at exceptionally high levels. Yet, the regulator did not intervene to rein in prices. Rather, it was argued that ensuring competition by bringing in private players involved a cost that the consumer had to bear. Needless to say, this did not work, because the subscriber base remained low. When repeated auctions of tranches of spectrum were initiated, the number of providers, capacities and competition increased, forcing prices down in the search for a subscriber base. With lower prices, the telecom service providers of that period discovered that they could not operate profitably if they were actually required to pay the amounts they had bid to obtain their licences. At that point, the government lent a helping hand. It allowed incumbent and new operators to migrate to a revenue sharing regime. away from the one based on a specific licence fee, allowing them to turn a profit.

But that was help too little and too late for many operators. The industry went through repeated "shakeouts" that have reduced the number of operators to essentially three—Airtel, Vodafone-Idea and Reliance Jio. Expansion to acquire and/or retain market share has required large resources, even as competition to woo subscribers has kept the average revenue per user extremely low. The result has been a long-term squeeze on margins. That trend was aggravated by the aggressive price war launched by late entrant Jio, which left the main competitors bleeding and steeped in debt. The result has been consolidation of an oligopoly in which public sector BSNL and MTNL have become marginal players. The trend to concentration was facilitated by repeated changes in the terms and tenure of licencing arrangements, involving implicit or explicit transfers to private firms to keep them in operation. In this way, the government as part of its programme of liberalization and reform not only transferred an industry that was earlier a government monopoly over to the private sector but also facilitated oligopolization of the digital infrastructure space. However, the government still remains crucial in providing both hardware support through public data communication networks and national data centres, which host the information needed for establishing nationwide digital networking, and the software systems such as the digital "unique" identity system Aadhaar and the public Unified Payment Interface (UPI) system.

Meanwhile, the low call and data costs and government programmes like Aadhaar and the UPI have resulted in a huge increase in the degree of digitization, albeit with the persistence of a significant digital divide. The number of mobile subscribers in India is estimated by the Telecom Regulatory Authority of India at around 1.15 billion in December 2024, including many people with multiple subscriptions. With smart phone costs in decline, the spread of mobile use has been accompanied by an increase in mobile based internet access. About a billion users are estimated by Statista to have accessed the internet via their mobile phones. In the event, internet penetration rate in India is estimated to have risen from about 14 per cent in 2014 to 52 per cent in 2024. Utilisation of the digital infrastructure has also been increasing. As of 2023, the average data consumption per user per month in India was estimated at 24.1 gigabytes, with e-commerce, online education, and higher OTT viewership contributing to the growth in data traffic. This was partly because, even by March 2021, broadband data costs in India had fallen to $0.68 per gigabyte (GB) of data, well below the global average of $4.21.

Externalities

The infrastructure sector is by nature one that contains facilities with large economy- wide externalities. Operations in a host of economic sectors are not just facilitated by the availability of infrastructural facilities such as power plants, roads and ports, but simply would not occur without them. Infrastructural support is therefore seen as crucial for output growth and productivity increase across the economy. In the case of digital infrastructure, its external effects are realized not just by the restructuring of productive activity to benefit from the myriad ways in which the technology can displace labour and increase productivity, but also by altering the ways in which the markets for products, services and labour are organized.

The base that this digital infrastructure provides has been leveraged to digitally offer e-commerce, educational and health services, for example, and launch a host of other means to deliver public services and manage and route payments to public programmes. The evidence points to phenomenal rates of expansion of the sector.

Among the many consequences of the Covid pandemic, one that is widely recognised is the accelerated expansion of, and increased dependence on, certain kinds of information technology (IT)-enabled services. IT-enabled operations that were earlier restricted to specialised services performed by companies exploiting the benefits of digital communication to undertake remote delivery, were extended across a wide array of digital platforms offering a range of services to individual and business in areas varying from ecommerce to social media, entertainment and care. Some, like ride hailing services such as Uber and Lyft (besides national versions like Ola in India) and delivery services such as Amazon and DoorDash (and Zomato that originated in India and has spread its tentacles abroad), are ubiquitous.

E-commerce is one obvious example, where the transformation of markets, especially retail markets has been remarkable. The market value of the e-commerce industry in India was 125 billion U.S dollars in 2024. And by 2025, the number of annual online shoppers in India was estimated to have increased to approximately 280 million from 205 million in 2022. The expansion was partly the result of the government's decision to allow 100 per cent foreign owned FDI in the sector, triggering the entry of global majors who sense the market potential in the country.

Meanwhile, the 'fintech' business, consisting of firms that use technology as a base for financial innovation leading to new processes, practices and products in financial markets, received a boost. According to the State of Indian Fintech Report 2024 from Inc42, in 2024 the total value of the fintech market in India was 793 billion. Fintech units cover a wide spectrum of activities, varying from digital payments, to online lending, insurance and wealth management. As of 2024, the lending segment accounted for 51 per cent, the digital payments segment 23 per cent, and Insurance provision 15 per cent. In 2025, India recorded $1.9 trillion worth of digital payment transactions, third only to China ($9.3 trillion) and the US ($3.1 trillion). According to Worldpay's Global Payments Report 2025, digital payments accounted for a 51 per cent share in point-of-sale transactions, followed by debit/credit cards at 28 per cent and cash at 18 per cent.

Many initial entrants started out as providers of payments services for merchants and utilities and their consumers/clients, serving as gateways and debiting consumer accounts against mandates to make periodic payments, by linking with banks and then with other payment methods such as credit cards (PhonePe, GooglePay, Paytm, BillDesk and PayU, for example). Others appeared as aggregators of options for investments in deposits, mutual funds or insurance policies (PolicyBazaar and BankBazaar). But over time, these and other new entities diversified into other sectors, providing innovative services that target new market segments. In the event, the industry came to consist of different kinds of operators. There were, 'enablers', who developed applications and provided 'software as a service' that allowed incumbent financial firms to better their services or offer new services. There were 'distributors' who provided online access to financial products offered by incumbent firms, with additional services such as comparison of the features of alternative products. And, there were 'full carriers' or providers offering complete financial services, such as trading platforms and original financial products. Thus, fintech companies can either facilitate traditional brick-and-mortar operators or disintermediate relationships between clients/customers and those incumbent firms.

A winning feature of this area is that the revenue model was in most instances clear, consisting either in commissions for serving as intermediaries or a return for directly providing a service such as insurance or stockbroking. This, however, did not mean that all the entrants into the sector, that has seen explosive growth, have been successful. For every known name such as Paytm, Zerodha or Digit Insurance, there are many that are unheard of and still struggling to plant their feet firmly in the space. Business is already concentrated. Headlines are captured by those who can convince investors to value them highly early in their existence, and some of that funding is used to run expensive advertising that helps pick up a larger list of customers/clients. Even the successful often have limited life -spans. The 'real' growth is not captured by the number of companies or even valuations, as by the volume of business. That volume is perhaps not growing as fast as company numbers or valuations and capitalization. But it is growing, nevertheless.

Besides these factors, government intervention to create supportive software and infrastructure has also played a crucial role. The intervention started in 2009 with the launch of two initiatives to facilitate the fintech boom: the development of the Unified Payments Interface (UPI)—a joint initiative of the National Payments Corporation of India (NPCIL), and of the biometric authentication and eKYC pathway offered by the Aadhaar initiative, under which a 12 digit identification number was issued to individuals by the Unique Identification Authority of India. The number serves as a proof of identity (with possibility of biometric verification) and address. Then came the government's facilitation of digital financial transactions through the launch of India Stack, which is an initiative aimed at developing a collection of application programme interfaces (APIs), that link the NPCIL's payments interface and the Aadhar database for verification to facilitate financial transactions of various kinds. The first set of uses were in payments systems. Besides use in BHIM, the payments app also developed by NPCIL, the UPI is used by many payments wallets.

Another important fintech protocol developed under India Stack is the Open Credit Enablement Network (OCEN) which consists of a set of APIs that connect various stages of the credit value chain such as lenders, protocol enabled technology service providers, underwriters and borrowers. The information needed to lubricate this process regarding the creditworthiness of the borrower, say, is provided by a Reserve Bank of India-licensed Account Aggregator, which is a non-banking financial company in the business of providing under a contract, the service of retrieving and collating through digital means financial information pertaining to a bank's customers and consolidating, organizing and presenting such information to the customer or any other financial information user as may be specified by the bank. Potential borrowers permit the collection and sharing financial information on their online financial activities. The OCEN protocol is expected to trigger a democratized lending boom that can reach credit to small businesses in a quick and seamless way.

One issue is that the regulatory framework that would govern this sector is still in its nascent stages. In the drive to facilitate an expansion of this sector, regulatory authorities like the RBI, SEBI and IRDA have tilted in favour of forbearance and accommodation, and to an extent even promotion. This is a cause for concern in a sector where risks and/or probability of delinquency are high, especially in the areas like peer-to-peer lending, crowd sourcing and alternative currencies. And then there is the problem of fraud through means such as phishing and planting malware along with identity theft, which makes the digital financial world far more insecure.

Edtech

Digital modes of transacting are rapidly transforming the education and health sectors as well. The edtech industry had experienced rapid growth during the pandemic years when learning from home was the only available alternative. However, as the pandemic waned and classrooms in the different segments that online providers had been catering to reopened, demand began its return to levels that would be normal. Overall demand was lower than expected, even it if varied considerably between, for example, the K-12 school segment and the test preparation segment.

According to an estimate, by early 2020, the cost of customer acquisition rose from an earlier 20-25% of revenues of edtech platforms to 70-80%. However, company valuations were soaring even while losses were mounting. There was no shortage of unicorns with valuations exceeding USD1bn in the sector and Byju's, the dominant player, was a decacorn, valued at more the USD10bn.

That former market leader, Byju's, is now as good as closed. That experience has revealed many fundamental weaknesses of the industry. Excessive optimism about market demand on the part of both new entrants and incumbents is the norm, leading to lack of due diligence as investors prioritise gaining a foothold and expand presence in a promising industry. The business model is focused on market reach rather than the substance or quality of the content offered. Following sharp interest rate increases from late 2022 onwards, a major crutch of the edtech industry disappeared. Overstaffing and excess capacity could no more be sustained. Layoffs and retrenchment followed. In areas such as test preparation, for admissions to institutions that hold out a promise of lucrative post-certification jobs and for entry into the prestigious central government services, young or new start-ups are still following the same strategy.

They compete for access to expensive, full-page advertising space in the front jackets of national newspapers. Others that have established themselves have turned more circumspect with respect to splurging on advertising, but the cost of past profligacy must still be met. Meanwhile, the quality of the actual pedagogy provided through such courses remains an area of concern, with wide variations and no clear standards.

Healthtech

The use of the broadband network and various kinds of smart devices to access health facilities received a boost during the Covid era, when physically availing health services by sections other than those looking to be treated for Covid infections became a problem. Patients wanting to avail health services began experimenting with virtual access. Doctors too found it difficult to pursue their profession and turned to healthtech as a solution. The result has been an explosion of entry into the healthtech startup space.

The healthtech sector consists of multiple segments. While technology aided diagnostics and treatment equipment has been a major niche, the more recent thrust is in IT-enabled delivery in areas such as telemedicine, e-pharmacy, fitness and wellness, healthcare IT and analytics, and personal health management. While the market has seen entry into all these segments, telemedicine and e-pharmacy services lead the shift.

According to an estimate made by Inc42, the size of the Indian healthtech Industry as of 2022 was $10.6 billion. That amounts to little more than a quarter of the overall healthcare market. This points to the rapid growth of Indian healthtech. Initially healthtech startups focused on information management solutions for hospitals. But more recently technology has been leveraged for telemedicine, pharma e-commerce, and diagnosis and surgery.

An interesting feature of the healthtech explosion is that most entrants have been startups looking to achieve scale by obtaining funding from private equity firms and/or venture capitalist firms. These firms were the ones willing to take the risks of initiating the digital transition in different segments of the health care business. Established business groups seem to enter through acquisitions, as happened in the pharma e-commerce sector with Reliance acquiring Netmeds in August 2020 and Tata Digital acquiring 1mg in June 2021.

Social media

Besides commercial ventures and government operations, digital proliferation has affected the private space as well, not least through social media. DataReportal estimates the number of Indian users of social media at 491 million users, which is second only to China's 1.1 trillion. However, given India's large population that figure reflects a still low penetration rate compared to many other countries in the Asia Pacific. At 33.7 per cent, India's penetration rate is 27th in rank, behind many smaller countries like Laos, Nepal, Sri Lanka and Bangladesh. According to a Statista survey of 25,891 respondents in India in 2025 on "Most common social media activities", "sent private messages" and "liked posts by other users or followed people" are the top two answers among Indian consumers.

As the use of India's digital infrastructure increases, misuse and the spread of false information are rife, as are also fears of censorship and surveillance.

Data protection and surveillance

There are, of course, concerns world-wide on the implications of allowing profit- hungry digital platform managers to determine what can and cannot flow through their channels and access privileged information stemming from that flow. There are major threats to privacy, which has been breached in multiple ways. And trolls and purveyors of hate speech have been treated with a light touch. The case for some form of regulation to protect the individual has many votaries.

But the Information Technology (Intermediaries Guidelines) Rules, 2011 of the Indian government seem to be more directed at state surveillance of social media traffic rather than driven by individual privacy concerns and platform abuse. The rules sought to specify the responsibilities of an "intermediary", defined as "any person who on behalf of another person receives, stores or transmits that record or provides any service with respect to that record and includes telecom service providers, network service providers, internet service providers, web-hosting service providers, search engines, online payment sites, online-auction sites, online-market places and cyber cafes."

The rules are ostensibly geared to preventing intermediaries from transmitting material that "threatens the unity, integrity, defence, security or sovereignty of India, friendly relations with foreign States, or public order, or causes incitement to the commission of any cognizable offence or prevents investigation of any offence or is insulting any foreign States". The regulation also applies to material that "is defamatory, obscene, pornographic, paedophilic, invasive of another's privacy, including bodily privacy, insulting or harassing on the basis of gender, libellous, racially or ethnically objectionable, relating to or encouraging money laundering or gambling, or otherwise inconsistent with or contrary to the laws of India".

The passage of the Digital Personal Data Protection (DPDP) Act brought to a close a long process that began with a draft Personal Data Protection Bill included in the 2018 report of the B. N. Srikrishna Committee, which was mandated to review the status of data protection in India and make recommendations on the personal data protection rules and procedures.

The law is extremely problematic—even dangerous—for a number of reasons. At one level, it dilutes the regulation of recognised "data fiduciaries" such as private companies and exempts the government from even the restrictions applicable to data fiduciaries, largely at the expense of the privacy of individuals. Moreover, the agency monitoring the activity of data fiduciaries and implementing the Act is to be constituted solely by the government, which raises questions on the independence and efficacy of the data protection board. There is reason to believe that the DPDPA will be used under vague grounds of 'national security' and 'public order'. On the other hand, for-profit players including big platform companies have greater freedom in storing and using data for commercial purposes, while individuals (data principals) will have very limited control over the collection, storage and use of information about them. The data regime allows cross-border data flow through foreign technology firms.

At the same time, the formulation of the Act suggests that the government intends to use the smoke screen of privacy to establish its total control over information, data and tracking. It also involves the effective destruction of the Right to Information Act, which is widely recognised as being essential for democratic functioning and accountability. The DPDP Act has directly amended the RTI Act in a way that makes it infructuous and totally ineffective, through Section 44 of the DPDPA, which states: "8. (1) Notwithstanding anything contained in this Act, there shall be no obligation to give any citizen, (j) information which relates to personal information."

These important deletions that remove the public interest dimension of the RTI Act mean that nobody can seek any information related to any "person" which means any name, or any means by which a person can be identified. The consequences are clear: ss a result of this, the RTI would allow citizens to only have access to government propaganda and be unable to probe any features that would pin accountability, or expose corruption or even honest mistakes in government functioning at all levels. Data fiduciaries include anyone who has a social media account or spread information (data) een if only through online messages. Without the protection and facilitation of the RTI Act, the DPDP Act becomes a comprehensively draconian framework for all users of information, by defining personal information and all those connected with it in a way that enables the State to target those attempting to use information in holding power to account and enables it to impose entirely disproportionate penalties up to Rs. 250 crores through a Government Appointed Centralised Board.

The perception that the rules and their modification can lead to censorship, invasion of privacy, surveillance and suppression of dissent seem warranted, and there are real concerns that this can lead to suppression of not just crucial information necessary for controlling corruption and ensuring basic accountability of governments, but also impact on journalism, research and other activities essential for a just society.

Transforming the labour market

A corollary of the digital explosion is the growth of digital labour and digitally- enabled labour. Not only has work to be performed to generate the software and applications that facilitate the digital economy, but a growing proportion of the workforce engages in the provision of digitally enabled services or is mobilised and allocated through digital platforms, in areas such as taxi services (Uber and Ola), delivery services (Zomato and Dunzo) or personal services delivered at home (Urban Company). Many of these are identified by the ILO as "location-based platforms" since task need to be performed at specified locations. A parallel process has been the emergence and growth of online digital labour platforms, which get tasks performed by workers serving as freelance and microtask executors, or taking up competitive programming assignments.

The new high growth sector is microtask crowdsourcing platforms such as Amazon Mechanical Turk (AMT) and Clickwork that allow work providers to directly access a large number of potential online workers and allocate to them tasks to be performed and delivered online without outsourcing the work to a corporate intermediary. These digital labour platforms have attracted a lot of attention and are presented by some as defining the future of work. But such a transition would be hampered in activities where successful outsourcing would require close supervision for ensuring quality of workers chosen, training to homogenise execution of repetitive tasks according to protocols specified, and monitoring to ensure volume, timeliness and quality of output. Digital labour platforms rely on algorithms that interpret background evidence and data emerging from past work performed to rate and choose workers, allocate them tasks and weed out those whose performance has been poor or whose work has been rejected for not meeting quality parameters. It is likely that these platforms are mainly used for sourcing workers at the lower levels of the skills range required to undertake work in areas varying from data entry and clerical services to software development. According to the ILO World Employment and Social Outlook 2021, globally the field of software development and technology dominates worker accessed through digital labour platforms, accounting for an estimated 39 per cent of the total in 2018 and 45 per cent in 2020. In 2020, 40 per cent of the demand for such workers came from clients based in the United States, followed by the United Kingdom, Australia and Canada. India accounted for 8 per cent of the demand.

These requests are substantially serviced by workers in the developing countries (especially Bangladesh, India, Pakistan, the Philippines and Ukraine), with India leading the pack and accounting for about a fifth of the total. As during the software services outsourcing boom of the 1990s, India has been an important contributor to the digitally enabled global workforce, with software development and technology workers accounting for a substantial share of its contribution. Demand for such online workers increased during the pandemic, being 50 per cent higher than at the beginning of the pandemic. Interestingly, women accounted for only 21 per cent Indian online workers, as compared with 39 per cent in Ukraine and 41 per cent in the US. In all three countries, women accounted for a larger share of the work in writing and translation, as compared with other occupations.

As digitally enabled and allocated work grows, there is evidence that average working conditions have been adversely affected. The ILO finds inadequacies in areas covering regularity of work and income, terms, social protection, skills utilisation, freedom of association and the right to collective bargaining. This is especially true of digitally mobilised and allocated work, whether by corporate intermediaries or by those demanding the services. Such workers, still largely identified as independent contractors rather than employees, are generally not legally recognised as workers in the digital economy. They are contractors finding work through “digital platforms”. Only those involved in developing, maintaining and improving the applications that form the core of these digital platforms are digital workers in this ecosystem. Like workers remotely providing services such as customer care, medical transcription or translation through digital connections transmitting voice, print, image and video mediated information, these contractors on digital platforms are digitally enabled workers rather than digital workers per se. While ride hailing and delivery services are centrally coordinated, the rise of digital labour platforms has paved the way for more decentralised transactions with direct contracts between clients and providers.

The pandemic accentuated the disruption of the place-bound nature of work as workers had to be required to work from home. This led to the "offshoring" of work from the office to the home and the honing of the means needed to allocate, monitor and coordinate the work of dispersed employees. Going forward, the share of those working from home is likely to rise, increasing the volume of digitally enabled work within individual organisations. That can in turn change the nature of contracts between employers and their employees even within individual firms, with more flexible terms and commitments and more online-enabled monitoring as well.

These processes only extend the tendencies that have been operative in the past in India's digital and digitally enabled economy. There have been a number of phases through which India's digital service economy has traversed. The first was the growth of offshored provision of software services such as coding, exemplified by the role that Indian software firms provided in addressing the Y2K problem. The second was the rapid expansion of the business process outsourcing sector, offering a range of business services through a hierarchy of call and data centres in terms of scale and sophistication of services offered. The third was the expansion of aggregator services of various kinds, leading to the establishment of major digital platforms that concentrate business in their hands, manage large volumes of business, but maintain a relatively small workforce as all of the actual service providers are treated as independent contractors. And a fourth is the engagement of workers from India by digital labour platforms.

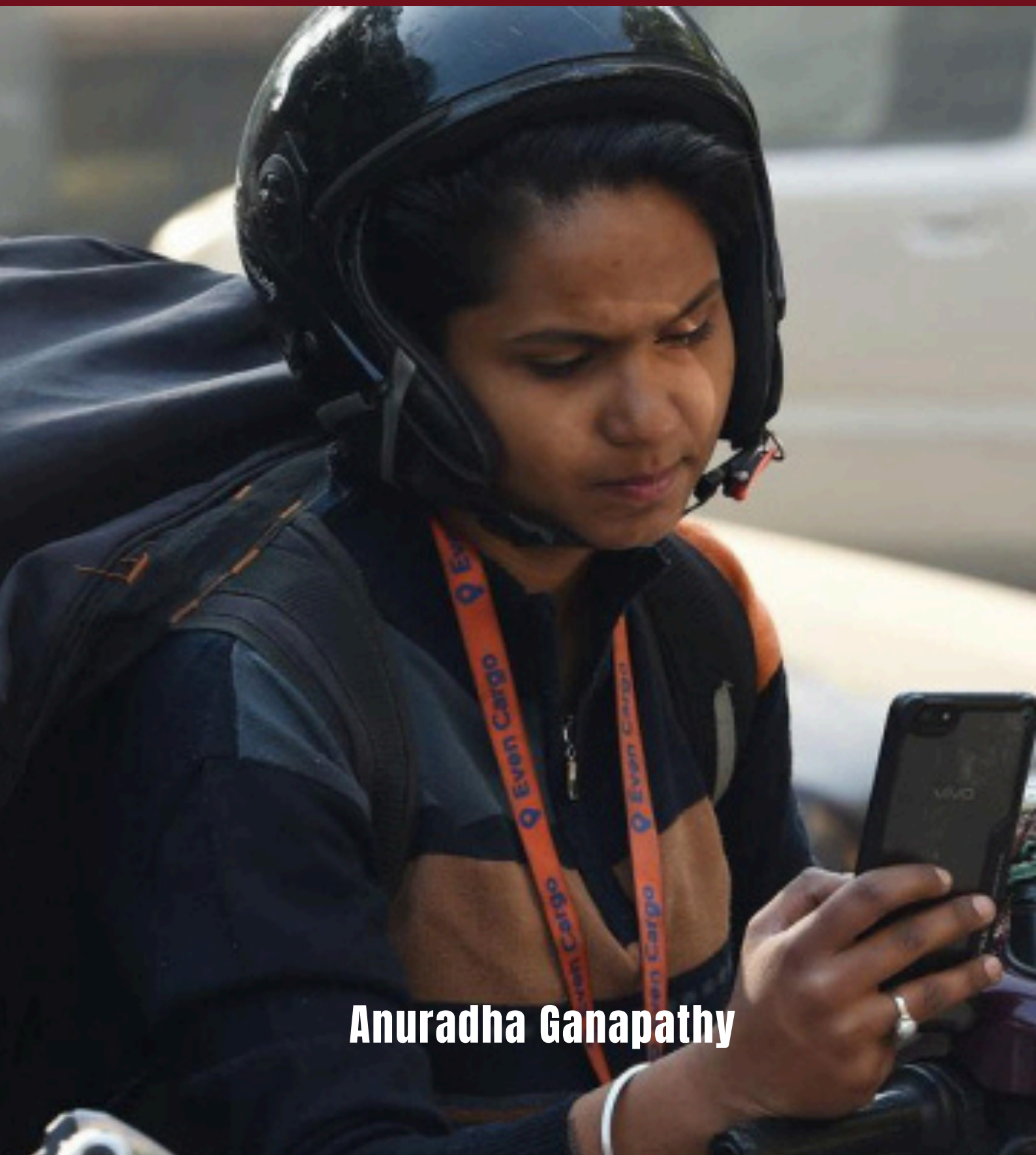
Implications

In sum, as India's digital infrastructure begins to extend to and transform sectors and spaces across the economy, the initial euphoria over the benefits the technology can bring has been moderated by fears of the inequalising, divisive and freedom- constraining effects it is beginning to have. Regulation by the State does not seem to be the answer as of now, because that regulation is itself a cause of many of the adverse consequences and fears being expressed.

Section 1:

Digital Footprint in Finance & Economy

Critical evaluation of women's participation in e-commerce



Anuradha Ganapathy

Critical evaluation of women's participation in e-commerce[1]

Anuradha Ganapathy

Introduction

Women's economic and digital empowerment is central to realizing women's rights and accelerating progress towards the Sustainable Development Goals (SDGs). In this report, we critically analyze women's participation in e-commerce in the digital economy. We take e-commerce to be the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders, noting that payment and delivery of the goods and services purchased through such means may not be online[2]. Our analysis therefore covers women who sell goods on digital marketplaces such as Amazon or Flipkart or qqsocial commerce platforms such as Instagram or Facebook, and women who provide services on digital labour platforms such as Amazon Mechanical Turk or Uber. We explore the terms of women's participation in such employment, that is, if and to what extent it qualifies as "decent work". By decent work, we mean work that allows them to secure stable wages, provides opportunities for economic as well as social mobility, and enables access to financing and infrastructural support, as well as social protection guarantees.

E-commerce as a pathway to employment and decent work - What is the current state of play?

Women are less likely to have built the productive capacities to reap the dividends of a digitalising economy. Work in the digital economy necessitates use and adoption of ICTs (Information and Communication Technologies)[3]. Unfortunately, despite the gains in connectivity and affordability, there is a significant capacity gap between men and women with respect to awareness and use of the internet (See Figure 4). According to the GSMA 2023 Mobile Gender Gap report, mobile internet adoption stalled among women and remains around 30% for the third year running in India and women are poorly placed with respect to being able to convert digital access into more productive uses.[4] The capacity gaps highlighted in Figure 4 directly translate into lower participation rates in online work. For example, a 2021 study by the International Labour Organization (ILO) showed that participation of women on online web-based platforms is lowest in India at 21%.[5]

[1] With conceptual and review inputs from Anita Gurumurthy anita@itforchange.net
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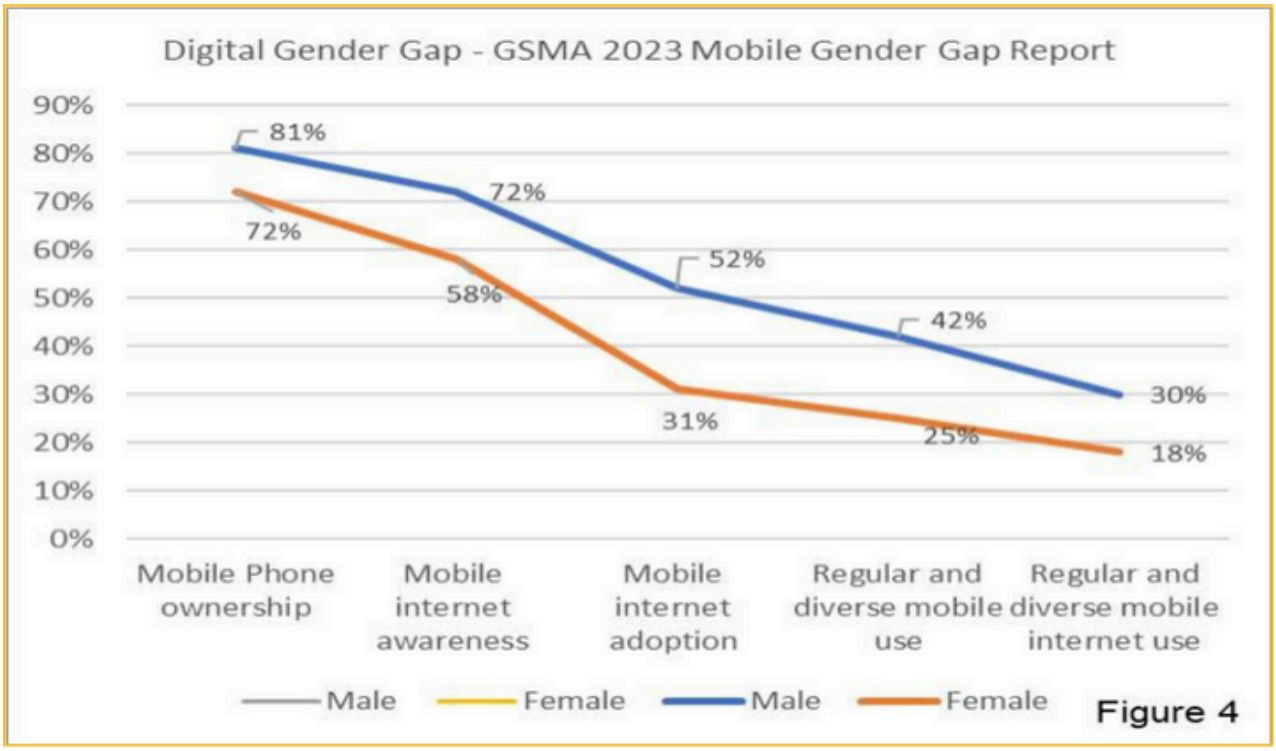

Figure 4

Regarding women's participation in location based platforms such as Uber, Zomato or Urban Clap, there are estimates which suggest that while India's gig economy of 7 million workers is only expected to boom in the upcoming years[5], less than 10% of this workforce is made up of women workers, and they tend to be concentrated in highly feminized, often low paying sectors such as beauty work and domestic work[7]. While similar gender aggregated data is not available for sellers on e-commerce platforms in India, a study by IFC on women sellers on Lazada, a South Asian e-commerce platform, found mixed evidence - in Indonesia, ⅓ of the businesses on Lazada were owned by women, while this number was 2/3rds in Philippines.[8]

The current models of work offered in the digital economy do not enable economic and social mobility of women workers / women led enterprises.

While digitally mediated work continues to make headlines as being women friendly, or even women-centric[9], it does not necessarily address the pre-existing structural precarities of the informal labour market. Women workers on digital labour platforms tend to be concentrated in low value, repetitive work cycles, engage in various forms of unpaid work, do not receive guarantees of a living wage, social protection or childcare support, and bear punitive costs of an algorithmically determined arbitrary work regime that masquerades as flexibility.[10, 11,12] On digital marketplaces including social media platforms, women sellers are locked into unproductive cycles - i.e, paid promotions and advertising to "buy" visibility, no corresponding guarantee of either visibility or sales, a diminished presence due to the inability to compete with the financial prowess of the big enterprises, but no option to exit because alternate online pathways do not exist.[13,14]

[5] NITI Aayog. (2022, June). *India's booming gig and platform economy: Perspectives and recommendations on the future of work.* Government of India. https://www.niti.gov.in/sites/default/files/2022-06/25th_June_Final_Report_27062022.pdf
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[8] International Finance Corporation. (2021, May). *Women and e-commerce in Southeast Asia: Executive summary.* World Bank Group. https://www.ifc.org/content/dam/ifc/doc/mgrt/202105-digital2equal-women-and-e-commerce-southeast-asia-summary.pdf
[9] Faleiro, S. (2023, May). *A startup ushered thousands of Indian women into gig work, for better and worse.* Rest of World. https://restofworld.org/2023/urban-company-gig-work-women-india/
[10] Krishnan, M. (2023, May). Why are Indian women struggling with gig economy? Deutsche Welle. https://www.dw.com/en/why-are-indian-women-struggling-with-gig-economy/a-65707452
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[12] Blanchard, O., Lopes, C., & Devaney, P. (Eds.). (2023). Global perspectives on women, work, and digital labour platforms. Digital Future Society. https://cis-india.org/raw/lse-ambika-tandon-october-21-2021-ambika-tandon-gender-and-gig-work
[13] IT for Change, India MSME report, forthcoming
[14] https://cis-india.org/raw/procurement-digital-platforms.pdf

Essentially, Big Tech's monopolistic capture of e- commerce coupled with its opaque algorithmic apparatus operates as a situation of privatized and discriminatory gatekeeping[15], adversely impacting small producers and sellers for whom e-commerce is a key livelihood source.[16] Unsurprisingly, women sellers on online platforms tend to be less profitable than their male counterparts[17,18], a phenomenon that only reinforces the dangers of conflating "ad- driven persuasion models of large digital platforms"[19] with sustainable market access pathways for women. There is little data to show that women sellers on e-commercel platforms have been able to access any form of infrastructural support and / guarantees in the form of low cost capital, preferential pricing, mobility and transportation support, procurement guarantees, etc. - and therefore no evidence that can support claims of their economic and / social upgrades. Algorithmic practices of digital platforms are antithetical to decent work and anti- discriminatory standards.

The rise of the digital economy is increasingly being associated with worsening workplace standards, whether it is in the area of increased surveillance, lowering of quality jobs, erosion of labour standards, or violations of worker rights[20]. For women in particular, these erosions prove costly, often having grievous economic and human rights impacts. For example, being exempt from having to provide for worker safety and protection allows gig work platforms to unilaterally ban female workers from doing perceived 'unsafe jobs' and working at night, as well as subjecting them to intrusive and uncompensated surveillance measures to monitor their work, which decreases women's earnings and increases platform control, while also depriving them of basic labour rights to access safe working conditions and equal employment opportunities[21]. On online web-based platforms, women workers residing in developing countries regularly report being excluded from work opportunities and / or receiving low pay on the basis of nationality and gender[22]. Studies of women sellers on large digital platforms have shown that they are subject to various forms of algorithmic price discrimination and gender based abuse and harassment, with no recourse to redressal mechanisms.[13,24,25]

Infrastructural power of BigTech platforms charged by financialisation logics creates an anti-competitive marketplace that adversely impacts precarious workers. One of the core issues emerging of the digital economy is that a handful of Big Tech monopolies have come to form the infrastructural core of the digital economy, operating as obligatory digital interfaces for social and economic exchange and monopolizing flows of information and communication[26]. Many of them have vertically integrated business models which allows them to entrench monopolistic and anti-competitive practices that are directly antithetical to values of public good (Ibid). For example, Amazon is a platform intermediary, a seller and a services provider at the same time. It has used seller data to build its own product lines and manipulated search results to boost these products on the platform[27], and it also coerces sellers into buying its logistic services[28]. Indeed, if Amazon continues to remain the main route for women led enterprises and small businesses to access e-commerce, they are likely to

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[17] Leveraging ICT Technologies in Closing the Gender Gap | Other papers (worldbank.org)
[18] UNCTAD. (2023, May). *E-commerce from a gender and development perspective*. UN Trade and Development. https://unctad.org/publication/e-commerce-gender-and-development-perspective
[19] Hill, R. *The curse of concentration* [Review of the book *How to destroy surveillance capitalism*. b2o: boundary 2 online. https://www.boundary2.org/2021/04/richard-hill-the-curse-of-concentration-review-of-cory-doctorow-how-to-destroy-surveillance-capitalism/
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[26] Fernandez, R., Adriaans, I., Klinge, T. J., & Hendrikse, R. (2021, February). *How Big Tech is becoming the government*. SOMO – Centre for Research on Multinational Corporations. https://www.somo.nl/how-big-tech-is-becoming-the-government/
[27] Bhat, A. (2022, September). *Why India's small sellers still don't trust Amazon*. Rest of World. https://restofworld.org/2022/amazon-small-businesses-in-india/
[28] Silva, M. (2023, June). Amazon's chokehold over online shopping in the EU and UK. SOMO. https://www.somo.nl/amazons-chokehold-over-online-shopping-in-the-eu-and-uk/

remain locked into these predatory forms of market access, with little recourse to make any claims either to access or protect their data, or to make their own business choices.

Digital trade regimes have gendered impacts.

Trade policies are gender-sensitive, and both employment and income of women producers and sellers are impacted differently in export led regimes[29]. The ongoing push at the World Trade Organization that mandates free flows of cross-border data with no requirements for algorithmic source code disclosures or local data storage will, among other things, allow governments of the Global North to use government owned data sets, further entrenching their dominance and hurting MSMEs and small producers in the Global South[30]. In the recent EU FTA negotiations, the EU is asking India for full liberalization of the government procurement (GP) policy[31]. GP allows India to support micro, small and medium enterprises (MSMEs), women entrepreneurs and other backward communities, through preferential procurement policies, which may have to be compromised or extended to EU women entrepreneurs who may be far ahead of these groups in economic might (Ibid). There is also a push to renew or make permanent the moratorium on customs duties on electronic transmissions, which would erode a significant revenue base of many countries[32]. At a time when job losses due to AI automation are more likely to impact sectors employing women, such erosion will hurt India's ability to develop a strong fiscal base for employment generation, re-skilling and the creation of social security nets.

A blueprint for gender responsive e-commerce

As Sabine Pfeiffer argues, the fundamental issue of the economy today is that it is no longer driven by a logic of production and innovation, because there is little to achieve by way of productivity gains in manufacturing businesses and / global value chains[33]. All market forces therefore, are now directed towards ubiquitous consumption and fast disruption, i.e, finding new markets and being the first to realize value (Ibid). In the specific context of ecommerce in the digital economy, this consumption-only logic has not only fuelled an unbridled expansion and monopolistic market trends, but it has also been tied into non-productive distributive forces that are not linked to value generation (Ibid). In many ways, the gender and e-commerce playbook in the digital economy has literally been reduced to a rhetoric of lowered entry barriers to the market, notwithstanding the fact that the market itself is dangerously (and poisonously) tilted towards an endless consumption cycle that is vying for eyeballs "on-loop". The huge spends on personalized advertising and the speculative value of data, which are the key drivers of e-commerce in today's digital economy, are linked to value realization on the market, and not to building productive worker and infrastructure capacities to trade in goods and services. Vital care and social protection infrastructure have been left to unforgiving disintermediation models such as those engendered by the current AI tools, with automation becoming an ideological force that denies women the opportunity to participate on equal terms. We urgently need to steer away from these consumption-led, monopolistic and extractivist paradigms of e-commerce, to one that is rooted in values of democracy and public good - prioritizing small producer capacity building, infrastructural improvements, economic and social upgrades for the worker, and socialization of value. Some concrete pathways for constructing these paradigms are highlighted below.

[29] Thystrup, A. G. (2023). *Gender-Inclusive Governance for e-Commerce, Digital Trade, and Trade in Services: A Look at Domestic Regulation.* In A. Bahri, D. López, & J. Remy (Eds.), *Trade Policy and Gender Equality* (pp. 120-153). Cambridge University Press. https://www.cambridge.org/core/books/trade-policy-and-gender-equality/genderinclusive-governance-for-ecommerce-digital-trade-and-trade-in-services/325FB0526156B30E43A58709CC54C189

[30] Hill, R. (2017, December). Micro, small, and medium-sized enterprises and e-commerce. https://www.ourworldisnotforsale.net/2017/Hill_MSMEs_E-commerce.pdf

[31] Sengupta, R. (2023, June). *Proposed EU-India FTA: Can India protect its development objectives by signing a free trade agreement with an unequal partner with different ambitions?* Heinrich-Böll-Stiftung. https://in.boell.org/en/2023/06/07/proposed-eu-india-fta

[32] Vipra, J. (2024, February). *What does trade have to do with AI regulation? A primer on digital trade rules and AI regulation.* Bot Populi: Talking Digital Justice. https://botpopuli.net/what-does-trade-have-to-do-with-ai-regulation/

[33] Pfeiffer, S. (2022). *Digital capitalism and distributive forces.* Columbia University Press. https://cup.columbia.edu/book/a/9783837658934

Strong platform regulation to break monopoly market power and anti-competitive regimes.

Regulating the monopolistic power and anti-competitive practices of Big Tech is of utmost priority. Key here is to understand that Big Tech market practices have upended traditional notions of both "competition" - i.e., access to low prices would render dominance irrelevant, and "anti-trust" - i.e, dominance as permissible, but its abuse as prohibited[34]. Big Tech has transformed the structural underpinnings of the market and competition within it, and therefore dominance in and of itself must be regulated (Ibid). These ideas are gaining ground and the recent Europe's Digital Markets Act which aims to prevent Big Tech companies and their platforms from abusing their market power, is an important litigation in this direction[35]. China's antitrust law amendments now prohibit "competition by abusing data, algorithms, technology", and enforce "greater scrutiny upon mergers and acquisitions that involve public welfare"[36]. Recently, Google agreed to pay $700m (£550m) and change its Play Store rules after being accused in court of using anti-competitive practices to become the dominant search engine[37], again a development that can pave the way for more stringent platform legislation in the immediate future.

Digital trade regulation that protects national sovereignty and domestic policy space.

The current trade regimes are inadequate to capture the complexities of the digital regime, and will only intensify with the the expansion of artificial intelligence technologies[38]. The recent change in the US position at the JSI (Joint Statement of Interest) on issues such as data flows, server locations, trade secret protections for source code and algorithms and non-discrimination, is undoubtedly welcome, and reflects the recognition that the antimonopoly battle at home should not be contradicted or undermined by trade rules that have been designed by the very corporations they are intended to benefit[39]. Developing countries need to come together and push for alternatives to trade provisions that restrict their sovereignty and the ability to implement public interest regulation[40]. International cooperation has to be balanced with locally tailored solutions and looking beyond rigid global trade rules to address the needs and considerations of developing countries[41].

Public ecommerce pathways to democratize value.

Investments in innovations such as public data pools and machine readable data sets, public data exchange protocols, public cloud infrastructure and public digital payments are foundational to catalyze diverse platform ecosystems[42]. Governments could also look at publicly funded e-commerce marketplaces that provide preferential terms (low commissions, for example) to local women producers, micro-entrepreneurs and artisans, and use 'public big data tools' to nudge consumers towards goods produced by them, or publicly managed labor portals in women dominated service work, to connect workers to clients across different cities (Ibid).

[34] Sen, S., & Vaidya, E. (2023, November). The evolution of Big Tech litigation: Is 2023 the year when litigation against Big Tech reaches a turning point? Bot Populi: Talking Digital Justice. https://botpopuli.net/the-evolution-of-big-tech-litigation/
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[41] Shaping%20the%20Future%20of%20 Multilateralism%20-%20 Burcu%20Kilic_FINAL.pdf (boell.org)
[42] Gurumurthy, A., & Chami, N. (2021). Building back better with e-commerce: A feminist roadmap. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4033057. Available at SSRN: https://doi.org/10.2139/ssrn.4375846

A noteworthy development in public innovation is India's Open Network of Development Commerce (ONDC), which uses open-source protocols to establish a decentralized, interoperable network for digital commerce, with the objective of promoting fair competition in the e-commerce[43]. While it is still too early to make an assessment of its impact for small sellers, it is important for such efforts to also be scaffolded by the right legislation in order to ensure that their "publicness" is not appropriated through gatekeeping tactics that are characteristic of business models in the digital economy[44].

Labour policies that secure worker rights and build workforce resilience.

Labour reforms will be crucial to secure and sustain women's participation in e- commerce, and India has seen some positive developments on this front. The recent Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023', is one important step, which, among other things, will impose a welfare fee on aggregators like Amazon, Ola, and Zomato for the welfare fund for gig workers working with these platforms[45]. The Karnataka government also announced the implementation of insurance cover worth Rs 4 lakh to each gig worker in Karnataka[46]. However, a lot more needs to be done beyond social protection, including regulation of algorithmic work management practices, mandating transparency and explainability of algorithmic decisions, enforcing data rights and data portability, and protecting the right to collectivize[47]. Labour regulation apart, we also need to devise policies that enforce re-skilling, redeployment, and preferential hiring of women workers whose jobs may be at risk for displacement by AI.

Alternative platform models rooted in solidarity and co-operative logics.

Meso-level organizations such as women farmer producer groups, worker unions and co--operatives can be catalyzed to set up alternative worker centric platform models through the provision of seed funds, and other infrastructural and technical support[48]. Programs such as WEConnect International or the UN Women's "Buy from Women" which connect small producers and women owned businesses with large suppliers and corporate buyers, while also supporting their capacity building and market information needs, can be replicated at the domestic level[49]. The recent Thiruvananthapuram Declaration on a New Innovation Ecosystem for Our Collective Digital Futures[50] issued jointly Kerala Development and Innovation Strategic Council (KDISC), IT for Change, and Platform Cooperativism Consortium, demonstrates a collective commitment amongst stakeholders from diverse groups across the world to envision and implement a new platform order that is anchored in principles of fraternity and cooperation.

Conclusion

Women's economic and digital empowerment is central to realizing women's rights and accelerating progress towards the Sustainable Development Goals (SDGs). Having seen COVID 19 reverse many hard won gains in gender equality, we are once again confronted with the possibility that women workers are least likely to benefit from the e-commerce gold rush that India is touted to be at the helm of.

[43] Singh, C. (2022, September). Can public goods be the answer to fixing e-commerce? Bot Populi: Talking Digital Justice. https://botpopuli.net/can-public-goods-be-the-answer-to-fixing-e-commerce/
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The gender inequalities, labour market asymmetries, structural precarities and institutional and legislative voids highlighted above are not trivial by any means, and have implications not just in terms of denial of equal opportunities and means, but also for more fundamental questions of re-distribution and rights in a world that we increasingly encounter through a digital-by-default paradigm. The consumption led e- commerce model of today is both unsustainable and antithetical to principles of gender equality and decent work. The starting point of a gender-responsive, worker centric e-commerce blueprint therefore is to root it back into a productivity and regenerative capability focus linked to human and social well being. The future of work has to be upheld by a feminist social contract that centers justice, equality and dignity at work. This requires us to invest in building an enabling public innovation infrastructure and a digital paradigm based on value creation and re-distribution, along with strong domestic and international regulation that secures fair market practices and worker rights.

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India’s DPG strategy – Platformisation as de facto privatisation of the public good?

Eshani Vaidya

India's DPG strategy - Platformisation as de facto privatisation of the public good?

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Reviewed by: Sadhana Sanjay

Abstract

India's leapfrog to the digital age comes on the heels of a steady rise of one-size-fits- all software solutions to complex issues of inclusion in welfare service delivery. This essay examines how the rise of digital public infrastructure in India has sidelined the public value of technological interventions to place a disproportionate focus on rapid expansion and scaling. In this context, the essay highlights several emerging trends— the rise of the platformised state, the centralising and exclusionary tendencies of digital interventions, and finally, the transformation of the consumer to the citizen. The essay concludes with an emphasis on the urgent need for a more inclusive approach towards the design and deployment of digital public infrastructure.

Essay

India's vision for Digital Public Infrastructure (DPI) holds a grand promise- "to solve society's problems"[51]. An oversimplified statement, perhaps; this promise lends a useful lens through which one can evaluate India's transition to the digital and her chosen approach towards digitalisation[52]–notably, the adoption of technology as a panacea[53].This is bolstered by the assumption that digitalisation will bridge the many leakages in last-mile welfare service delivery and transform the role of the citizen to mimic that of a consumer[54]. This essay highlights the shortcomings of such a techno- deterministic approach, specifically one that erases the material reality of the relevant public.

India's Leapfrog to the Digital Age

DPIs are by no means a novel introduction to India's development policies. Their vision can be traced back to the evolution of Internet and Communications for Development (ICT4D) which had taken hold across various developing nations. Central to the adoption of ICT4D policies was the belief that technology would provide individual producers with the in-roads to improved access to information, thus allowing them to make informed decisions. This would, several economists advocated, 'strengthen decentralised market institutions such as property rights and price signals'[55]. This paved the way for sector-specific digitalisation policies-health, agriculture, payments—all of which were geared towards improving last-mile welfare service delivery.

[51] Bhojwani, T. (2023, July). India's digital transformation: Nandan Nilekani. SlideShare. https://www.slideshare.net/slideshow/indias-digital-transformation-by-nandan-nilekanipdf/258866916
[52] Digitalisation, in this essay, is used to refer to a technology-driven process overhaul, which also produces new forms of revenue. Digitalisation has been referred to as distinct from 'digitisation' which refers to a seamless transition of quantifiable data to digital datasets. See Mejias, U. A., & Couldry, N. (2019, November). Datafication. Internet Policy Review, 8(4). https://policyreview.info/concepts/datafication Sadowski, J. (2019, January). When data is capital: Datafication, accumulation, and extraction. Big Data & Society, 6(1), 205395171882054. https://doi.org/10.1177/2053951718820549
[53] Dasgupta, U. (2022, March). Only tech can't ensure good governance. Hindustan Times. https://www.hindustantimes.com/opinion/only-tech-can-t-ensure-good-governance-101648473724942.html
[54] Morozov, E. (2021). Saving the digital public sphere from Silicon Valley [Lecture]. https://www.kvan.nl/sites/default/files/kvan/archive_days_speechEMorozov%20(003).pdf
[55] Mann, L., & Iazzolino, G. (2021, July). From development state to corporate leviathan: Historicizing the infrastructural performativity of digital platforms within Kenyan agriculture. Development and Change, 52(4), 829-854. https://doi.org/10.1111/dech.12671

The Bhoomi project, for instance, was a concentrated effort towards building a centralised database of land records in rural India so as to expand the real estate market[56]. In keeping with this objective of creating large and centralised databases, the ICT4D initiative introduced building blocks that have led to the emergence of the India Stack—open APIs, cloud-based infrastructure, interoperability, etc.--which seek to 'unlock the economic primitives of identity, data, and payments at population scale.'[57]

Digitalisation and 'Statistics of Success'

This brings us to India's chosen mode of digitalisation i.e. to "think big, start small, scale fast"[58]. In other words, the pathway to digitalisation is to build population-scale infrastructure, whose success will be measured against rates of adoption across the nation. For instance, the India Stack website provides "statistics of success" which measure quantifiable outcomes such as the number of digital identity verifications, the value of monthly real-time mobile payments and the development of technology for 1.2 billion Indians. This points to a few dangerous trends that have emerged in the context of India's digitalisation journey—first, the scaling up of numbers is prioritised over scaling up impact. In other words, the success of a DPI is measured by values that can be easily quantified, such as rates of adoption. However, unquantifiable yet essential public values, such as trust between a doctor and patient, or the ability to navigate a complex public health ecosystem are de-prioritised. This ties into the second trend of hyperfocus on rapid adoption, which often comes at the cost of meaningful inclusion. For instance, during the COVID-19 pandemic, digital health IDs were generated at scale without individual consent in India[59]. This undermines individual autonomy-yet, the number of IDs generated was treated as a metric of success, while the dilution of one's autonomy was disregarded.

These trends highlight the broader market-first logic on the basis of which DPIs are deployed in India. They look to 'disrupt' traditional decentralised sectors, such as healthcare and agriculture, and place non-state actors at critical nodes of welfare service delivery. For example, the India Digital Ecosystem for Agriculture seeks to link Aadhaar with a unique farmer ID. This database will be built by Microsoft, under the Department of Agriculture and Farmers Welfare[60]. Microsoft will, therefore, have unbridled access to farmer data that will be held in a corporate enclosure, posing risks of data abuse and further dilution of the farmers' right to privacy and autonomy[61]. While technological interventions, particularly digital intelligence have the ability to improve welfare service delivery, a market-first approach will only seek to disrupt traditional sectors, to pave the way for the rapid expansion of centralised and exclusionary technological interventions. This will, inevitably, severely undermine the claims of right-holders.

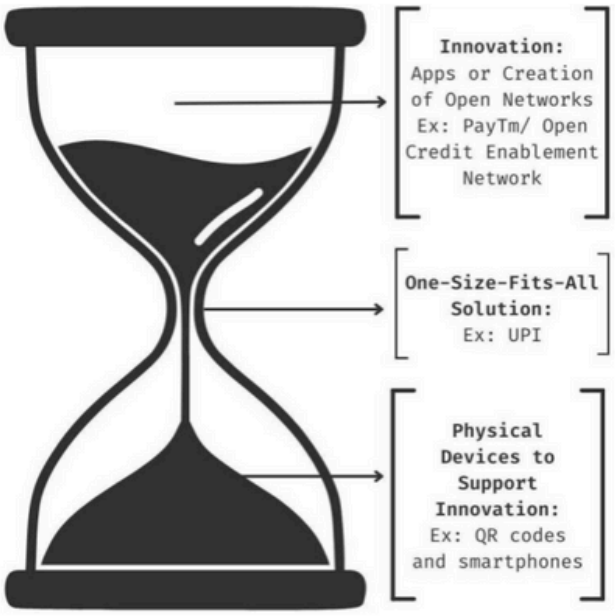
[56] Nayak, P. (2021). From land reform to guaranteeing title to land (secure property rights) in India: Implications for democracy. In Companion to Indian democracy. Routledge India.
In Gurumurthy, A., Chami, N., & Kumar, R. (2022, October). Recasting land tenure rights in the data epoch: Insights from a country case study of India. IT for Change. https://itforchange.net/sites/default/files/2224/ITFC_Recasting%20Land%20Tenure%20Rights%20in%20the%20Data%20Epoch.pdf
[57] India Stack. India Stack. Retrieved June 14, 2024, from https://indiastack.org/
[58] National Health Authority. (2019). National Digital Health Blueprint. Ministry of Health and Family Welfare. https://abdm.gov.in:8081/uploads/ndhb_1_56ec695bc8.pdf
[59] Barnagarwala, T. (2022, August). How India is creating digital health accounts of its citizens without their knowledge. Scroll.in. https://scroll.in/article/1031157/how-india-is-creating-digital-health-accounts-of-its-citizens-without-their-knowledge
[60] Agristack Project. (2024, June). Agristack project. https://pib.gov.in/pib.gov.in/Pressreleaseshare.aspx?PRID=1883173
[61] Gurumurthy, A., Chami, N., & Kumar, R. (2022, October). Recasting land tenure rights in the data epoch: Insights from a country case study of India. IT for Change. https://itforchange.net/sites/default/files/2224/ITFC_Recasting%20Land%20Tenure%20Rights%20in%20the%20Data%20Epoch.pdf

Digitalisation and Platformisation of the State

Government as a platform, is far from a unique mode of governance. The use of technology to support public administration, for instance, formed India's e-Government initiative in 2006.[12] However, digital intelligence, or the use of data- driven insights, have transformed this role further.

The two key features of this transformation include-first, the role of the government is limited to the provision of regulation, and essentially mimics that of a platform;[13] and secondly, the implementation of regulation, previously the mandate of the executive and other government agencies, is left to private entities (specifically, National Information Utilities) that work to complement the government's ICT4D initiatives.[14] This forms India's platform model of governance. To elucidate, we could look at India Stack, which comprises a foundational identity layer, a payments layer and a data layer. The objective is to increase efficiency in welfare service delivery, using real-time data as an aid. When combined with market power, a government as a platform model could accommodate entire bureaucracies on a central dashboard.[15]

The chosen design for innovation in the context of DPIs is to mimic an hourglass model (seen below)-specifically, to create a "thin solution" that will face minimal regulatory friction and enable innovation.[16] The government, rather than having to provide welfare services based on underlying use cases, can choose to adopt a one- size-fits-all solution. Private entities may then build atop this thin solution to develop targeted services. This design is what we see in Aadhaar, a digital ID for citizens, and the Unified Payments Interface (UPI), a real-time mobile payments system.



Source: Rebooting India[17]

[12] Ministry of Electronics and Information Technology, Government of India. (2024, June). National e-Governance Plan. https://www.meity.gov.in/divisions/national-e-governance-plan
[13] Singh, R. (2019, May). Give me a database and I will raise the nation-state. South Asia: Journal of South Asian Studies, 42(3), 501-518. https://doi.org/10.1080/00856401.2019.1602810
[14] Panday, J. (2023). India Stack: Public-private roads to data sovereignty. Internet Governance Project. https://www.internetgovernance.org/research/india-stack-public-private-roads-to-data-sovereignty/
[15] Nilekani, N., & Shah, V. (2015). Rebooting India. Penguin India. https://www.penguin.co.in/book/rebooting-india-2/
[16] ibid.
[17] bid.

The nimble one-size-fits-all technological solution, let's say the Unified Payments Interface, provided by the State would be supported by physical infrastructure at the bottom layer, for instance, smartphones, QR codes, wired or wireless networks, and so on. Above this solution, UPI backed by physical infrastructure (from the bottom layer) will enable innovation across various applications, such as PayTM, or the creation of open networks, such as the Open Credit Enablement Network. This bolsters the claim made by several designers of India Stack–that "the fundamental nature of government is a platform"[68].

The danger of the hourglass model is that problems firmly placed in the material reality of individuals and communities and the associated social context are erased. For instance, a digital health intervention ignores the material reality of poor public health infrastructure, poor data management, and reduced public spending;[69] similarly, a digital lending model ignores that farmers do not have access to a digital credit history and so on. The day-to-day, lived realities of individuals and communities are reduced to smaller problems that can be easily programmed and quantified within the platform model. This is supported by the assumption that a competitive market, by itself, can ensure equitable distribution of resources. However, blind trust placed in the market and technology shifts focus away from building effective alternatives to government as a platform. In their attempt to curb inefficiencies in public sector service delivery, an inherently centralising tendency of the platform model is surfaced. This concentrates the ability to determine the design, use, and deployment of technology in the hands of a few. This centralising tendency, in addition to doing away with space for an alternative that values the public good, can lead to exclusionary harm. Aadhaar, designed as the solution to improve the delivery of food grain under the Public Distribution System, is unable to plug leakages that arise from the failure of technology. Numerous scholars have highlighted the shortcomings of the Aadhaar identification processes, ranging from enrollment (persons with disability were unable to enrol) to authentication-related failures (manual labourers susceptible to changes in fingerprints were denied access to ration)[70]. In this context, it is clear that the use of technology as a silver bullet, specifically when deployed through the platform model, subverts inclusive and effective modes of welfare delivery.

Digitalisation and the Transformation of the Citizen to Consumer

The overarching objective of India's DPIs is to engage in efficient service delivery. In healthcare, this means achieving universal healthcare; in finance, this means achieving financial inclusion; and in data governance, this means placing individuals as owners of their data. The throughline across these objectives is that of building "citizen-centric" services. Used across various policies, guidelines, and blueprints in these sectors, the phrase citizen-centric places the individual at the centre of most, if not all digitalisation initiatives. However, whether DPIs actually further citizen participation and autonomy must be interrogated.

[68] Ibid. In Singh, R. (2019, May). Give me a database and I will raise the nation-state. South Asia: Journal of South Asian Studies, 42(3), 501-518. https://doi.org/10.1080/00856401.2019.1602810
[69] Rao, K. S. (2017). Do we care? Oxford University Press. https://global.oup.com/academic/product/do-we-care-9780199469543?lang=en&cc=gb
[70] Khera, R. (2019, April). Aadhaar failures: A tragedy of errors. Economic and Political Weekly. https://www.epw.in/engage/article/aadhaar-failures-food-services-welfare

Citizens and their Purchasing Power

India's chosen mode of digitalisation ties into a longer historical arc of a steady and sustained reduction in public spending[71]. This, when coupled with the Indian software industry looking to expand and diversify[72] and ICT4D meant that there was a novel form of private capture emerging. The software industry, in an attempt to expand and diversify, began to view the Indian citizen as a consumer. This allowed them to circumvent the regulatory limitations of the traditional software industry, and to view citizens as an untapped market of consumers[73]. This also permitted private entities to work alongside the government to build software solutions for development (see: ICT4D), specifically welfare service delivery. The effect—access to welfare is now contingent on an individual's purchasing power, transforming the role of the citizen to that of a consumer.

The citizen is transformed into a consumer, rather than an autonomous individual who is a "partner in building the nation"[74] and a right-holder. For example, access to healthcare services—diagnostic or insurance—will increasingly depend on an individual's purchasing power. The non-state actor, at present, has no obligation to enforce the right to equal treatment in their practice. Rather, a consumer, in exchange for faster and cheaper services, will "consent" to being subject to the logic of the market. For instance, a borrower, in India's digital lending ecosystem, can only share data with lenders through the Account Aggregator networks, which opens them up to the dangers of lock-ins within the ecosystem. This allows an economic/market-first logic to prevail over public values, which are outside the ambit of a consumer- business arrangement.

Citizens as Data Points

With large-scale data systems occupying the forefront of contemporary governance, the objective became that of building large centralised databases that would operate as single sources of truth, and essentially allow citizens to access welfare services through a one-stop-shop of identification, payments and data. The citizen-consumers (used as a shorthand for citizens transformed to consumers) must be aware of the extent of data extractivism, the purpose of data collection and most importantly, how that affects their access to critical services.

The platform mediates the relationship between the consumer-citizen and the provider of welfare (which, in the context of DPIs, includes the State and non-state actors alike). Central to the adoption of DPIs is the trust within this relationship, specifically the trust that citizens place in the mechanisms of welfare service delivery—do they feel empowered to seamlessly navigate the corridors of the relevant DPI? Most often, the processes and values of datafication are left opaque to citizens. For example, OCEN permits the grant of credit based on an individual's digital history, instead of the traditional form of collateral-based lending. This brings up several questions— will an individual's digital history be used to predict a likely future? Will the individual's access to critical services, such as credit, be conditional on the use of such predictive models? Do these predictive models consider the individual within their material realities? These questions remain, for the most part, unanswered. Most individuals do not have the capabilities to grapple with these questions and are primarily concerned with the resultant conditional access to critical services.

[71] Rao, K. S. (2017). Do we care? Oxford University Press. https://global.oup.com/academic/product/do-we-care-9780199469543?lang=en&cc=gb
[72] Pandey, J. (2023). India Stack: Public-private roads to data sovereignty. Internet Governance Project. https://www.internetgovernance.org/research/india-stack-public-private-roads-to-data-sovereignty/
[73] Samdub, M., & Hendrix, J. Unpacking the Bangalore ideology. Tech Policy Press. https://www.techpolicy.press/unpacking-the-bangalore-ideology/
[74] Dasgupta, U. (2022, March). Only tech can't ensure good governance. Hindustan Times. https://www.hindustantimes.com/opinion/only-tech-can-t-ensure-good-governance-101648473724942.html

For instance, a credit lending algorithm KhetScore looks to build a predictive model to condense multiple data points (on weather, productivity of land, soil, land use classifications etc.) to a single score that will indicate the farmers' ability to repay the loan.[75] Similarly, a predictive model was used to determine whether an individual was eligible for insurance. Reliance on data points, as emphasised throughout this essay, erases the material reality of individuals. The use of such predictive will not only violate individual and collective privacy, but also severely limit access to critical welfare services.

Datafication also reduces complex social problems to easily quantifiable datasets.[76] Naturally, quantifiable assessments of complex social problems through an economic or market lens are rendered feasible, while considering public or social values are invisibilised. This also extends to the consumer-citizen, who must now concern themselves with how they can be visible to such datafied bureaucracies and maintain access to critical services.[77] The OCEN, for instance, is built atop India's foundational identity layer, Aadhaar. However, many individual, small farmers do not possess an Aadhaar card or a digital history that can be used instead of collateral. Rendered invisible and unable to access credit through the traditional or disrupted technological forms, they will be forced to turn to informal sources of credit. This undercuts the larger objective of creating digital lending platforms.

It is clear that building citizen-centric services falls short of true autonomy. Not only are citizens transformed to consumers, but the onus of accessing welfare is placed on the citizens – a stark contrast to their position as right-holders. Citizens have to ensure that they remain visible to the State in order to access welfare. The weakened state capacity and overreliance on the corrective forces of the market is illustrative in the absence of a robust data governance mechanism. The recently enacted Digital Personal Data Protection Act, 2023, for instance, does not empower individuals and communities to adequately exercise their data rights. While they may claim ownership over data as data principals, there are significant limitations to their autonomy.[78]

Digitalisation and the Prevailing Supremacy of the Market

With platforms and large-scale data systems becoming central to the distribution of welfare[79] and occupying infrastructural positions in society, the infrastructure will likely displace law, and further entrench the interests of the corporate. In his book Rebooting India,[80] Nandan Nilekani emphasises the need for institutional transformation to ensure that regulation does not stifle innovation. However, this is a traditional neoliberal logic-that regulation and market innovation are mutually exclusive. All markets are regulated—if not by the State, then by a contract, competition, price signals, and so on. With platforms occupying positions of infrastructure, regulation is moulded to suit the interests of the prevailing elite. The rule of law also takes a backseat in the absence of robust regulation-most DPIs are regulated by an executive mandate, and not a parliament-backed legislation. For instance, the digitalisation of health is supported by various policies and guidelines developed under the National Health Authority, a not-for-profit company under Section 8 of the Companies Act, 2013.

[75] Dvara E-Registry. (2021, November). Dvara E-Registry's analytics solutions for credit underwriting and monitoring agricultural loans. https://www.dvaraeregistry.com/insights/dvara-e-registrys-analytics-solutions-for-credit-underwriting-and-monitoring-agricultural-loans/

[76] Dasgupta, U. (2022, March). Only tech can't ensure good governance. Hindustan Times. https://www.hindustantimes.com/opinion/only-tech-can-t-ensure-good-governance-101648473724942.html

[77] "How do my actions impact my visibility (or lack thereof) in core data categories of organizing government services? How can I better fit within (or strategically disappear from) data systems that constitute my relationship to the state?" See Singh, R., & Jackson, S. (2021, October). Seeing like an infrastructure: Low-resolution citizens and the Aadhaar identification project. Proceedings of the ACM on Human-Computer Interaction, 5(CSCW2), 1-26. https://doi.org/10.1145/3476056

[78] For instance, the Act does not provide for meaningful consent. The notice and consent mechanism is ineffective because notices are often illegible to the layperson and far too long a read. Additionally, Section 7 of the Act permits the use of personal data of individuals for 'certain legitimate uses' in the absence of consent. Such a use includes the access to a State scheme or benefit, thus presenting individuals with a false choice—either consent to sharing your personal data or lose access to the concerned subsidy.

[79] Singh, R., & Jackson, S. (2021, October). Seeing like an infrastructure: Low-resolution citizens and the Aadhaar identification project. Proceedings of the ACM on Human-Computer Interaction, 5(CSCW2), 1-26. https://doi.org/10.1145/3476056

[80] Nilekani, N., & Shah, V. (2015). Rebooting India. Penguin India. https://www.penguin.co.in/book/rebooting-india-2/

Market Disruption and Increased Exclusions

With private, for-profit entities being granted an unencumbered passage to public service through DPIs, this may lead to further horizontal integration of power. Digital lending, for instance, relies, primarily, on data generated with the use of mobiles. Reliance Industries, through Reliance Jio Infocomm, has an established monopoly in the telecom network industry, and licences in payment banking as well as lending sectors would allow the monopolist to create lock-ins that affect the individual and competitors alike.

A citizen-centric governance mechanism is used as a mechanism to disrupt traditional sectors. This ties into the industry or start-up idea of disruption i.e. traditional institutions (more often than not, public institutions) were inefficient and needed to be replaced with efficient and nimble non-state actors[81]. For instance, the push for Electronic Health Records came largely from the insurance industry, so as to entrench and expand their positions of power within the healthcare ecosystem. Similarly, India's Direct Benefit Transfer programme, where cash transfers replaced government subsidies, requires financial inclusion, literacy and real-time access to the transferred cash[82]. There was a concentrated attempt at linking Aadhaar and UPI within this scheme. However, poor quality of data—varied databases were neither updated nor did they speak to each other—only increased exclusions. It is important to emphasise that there are pressing concerns in welfare service delivery in the country. However, technology cannot be used as a silver bullet to plug these leakages, especially without making visible the social and material realities in which technology operates. The solutions must explore increased investments in physical infrastructure, research, capacity building, and other offline solutions, and use technological interventions to complement – rather than supplant – them.

Conclusion

India's approach towards building its digital public infrastructures, under the guise of inclusion, is to place a disproportionate degree of focus on the individual. The language used is that of empowerment-building citizen-centric services, granting individual control over data, and allowing individuals to access credit based on predictive profiling among other digital intelligence. However, the role of the state has reduced to give way to platformised governance, which shifts focus away from individuals and communities as right-holders and transforms them into consumers. Non-state actors are not beholden to a social contract with consumers, which allows a market logic to prevail.

A market-first approach to welfare service delivery foregrounds values that are easily quantifiable in datasets, therefore privileging rapid expansion and scale over the public good. There is legitimacy that is granted to the data extractive practices of the state and non-state actors benefitting the interests of the corporation. Illustrated by the drive to develop one-size-fits-all solutions, the benefits of digitalisation, however, do not trickle down to the people. To build inclusive and responsive Digital Public Infrastructure, at scale, adopting a bottom-up, use-case approach is critical. Autonomy must extend to the ability of the people to meaningfully participate in the design of systems, their deployment, and their use. The importance of the role of the state, to achieve this goal, cannot be understated.

[81] Morozov, E. (2021). Saving the digital public sphere from Silicon Valley [Lecture]. https://www.kvan.nl/sites/default/files/kvan/archive_days_speechEMorozov%20(003).pdf
[82] Kapil, S. Cash, on delivery. DownToEarth. https://www.downtoearth.org.in/dte-infographics/DBT/index.html

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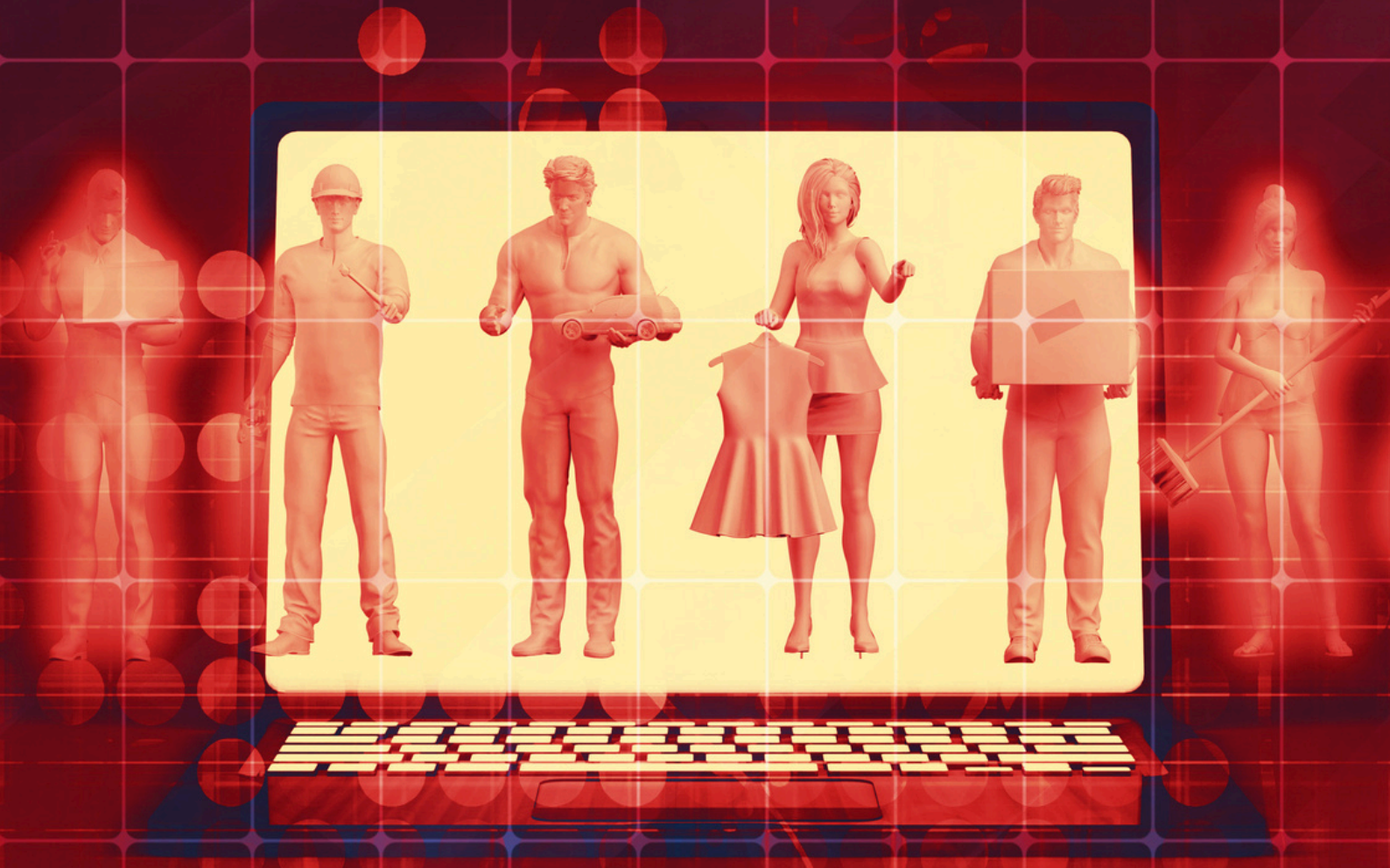
Exploring the policy-gaps concerning (platform-based) gig-workers and their precarity



Rakshita Swamy & Khush Vachhrajani

Exploring the policy-gaps concerning (platform-based) gig-workers and their precarity

Rakshita Swamy & Khush Vachharajani

World over, governments and courts are catching up with platforms to regulate the multiple strands of society that the latter are impacting. In particular focus is the growing recognition of how precarious the lives of workers associated with the platform industry is. Countries with decent and mostly universal frameworks of social security such as Singapore, Chile, Brazil, Malaysia etc have taken the step to enrol platform-based gig workers into existing databases while mandating matching contributions by employers and employees. Some countries such as Australia, Canada, Mexico etc have introduced legislations and policies that presume an employer- employee relationship between "partners" and the platform unless proven otherwise. In places such as California, the Courts have ruled in favour of identifying platform based gig workers as employees by applying tests of control.[83]

In India, the Code on Social Security 2020 was the first attempt made by the Central Government to address the plight of platform-based gig workers. And in this very first attempt, it made it clear that it was not willing to bring them under the jurisdiction of labour laws. By putting into the law that platform based gig workers are "outside the traditional employer employee relationship" the Indian Government's first legislative intervention for such workers struck a bloody blow that set the stage for what followed. Subsequent portions of the Code mandate provisions for registration and social security for gig workers, but it displays an act of charity instead of being a matter of their right. India also hosted the G20 Summit in 2023 and in the run up coordinated multiple deliberations to discuss the plight of gig workers. The G20 Declaration that was eventually signed by member States stated the following commitments.

- The Employment Working Group will leverage the valuable experiences of G20 member countries to craft a set of recommendations aimed at broadening social protection coverage for a more extensive segment of workers involved in platform and gig economies. This effort will support the creation of monitoring mechanisms to track advancements in social protection for gig and platform workers, thereby enhancing their well-being and economic security.

- Provide suggestions on improving national statistical capabilities and methodologies to accurately capture evolving work patterns, such as gig and platform work. Additionally, offer insights on harnessing platforms and technology to enhance the efficiency of data collection processes.

- Generating statistics related to the platform economy will organize data pertaining to diverse groups of workers across various platforms. This will empower both employers and workers to better understand the potential opportunities offered by digital platforms within the G20 nations.

[83] ABC test which presumes that an individual is an employee and not an independent contractor unless the hiring entity can establish the following three elements: a) Individual is free from the entity's control in performing his/her work in functional and contractual terms b) work performed by the individual is outside the usual course of the entity's core business operations c) the individual is customarily engaged in an independent established trade of the same nature as the work performed for the entity. All three tests must be satisfied before an individual can be classified as an independent contractor.

However, no practical attempt has been made by the Government of India to move towards the above direction. The imagination set forth by the CoSS remains top down, rhetorical, and has no rights based framework that fundamentally shifts the balance of power between employer and employee in an exploitative work arrangement. No move has been made by the Government of India to step in and do something about the precarious work conditions; low pay that remains much less than the statutory minimum wage; exposure to hazardous levels of pollution and adverse weather conditions; lack of access to minimum facilities including rest, health and safety; lack of an independent and effective grievance redress mechanism, and being subject to potentials of algorithmic exploitation that are just some of the issues that platform based gig workers have to deal with on a daily basis.

It is most promising that the beginning in this direction is instead being made by the States. In 2023, Rajasthan became the first State in the country to pass a legislation ensuring social security of platform-based gig workers. The law mandates the setting up a) a tripartite board with the representation of aggregators, worker organizations and Government tasked with the powers to register platform-based gig workers in the State, notify and administer social security schemes for them and monitor the implementation of the Act b) introduction of a dedicated welfare cess fee on each bill generated by the aggregator to the customer. The fee collected from individual transactions will be credited to a social security fund which shall be used towards financing schemes meant for the welfare of platform-based gig workers c) automatic registration of all platform-based gig workers operating in the state as soon as they 'onboard' aggregator platforms, irrespective of the duration of their association with the platform d) Presence of a centralized tracking and management system that shall function as a common portal for all financial transactions taking place on the aggregator's platform. The breakdown of individual bills into its constituent parts i.e. fare charged/service costs for the customer, payment made to the platform worker, cess fee deducted etc will be reflected in the centralized tracking and management system at the transaction level and e) making Department of Labour and the Tripartite Board responsible for registering, acknowledging and redressing grievances faced by platform basis gig workers in a time bound manner.

By assuring social security to platform based gig workers, the Rajasthan Law has responded to a clear want in the sector. The law does not provide guaranteed protection against all the precarities that we have described above, and can certainly not be seen as a single solution to the multiple problems faced by platform based gig workers. But what the Rajasthan law has managed to do in terms of a breakthrough is to hold the Government accountable for the plight of gig workers for the first time. By placing an onus on the state to manage revenues, administer schemes for welfare and put in place a grievance redress mechanism, the Law brings the State into an area it could no longer abdicate from. By ensuring workers have a right to information, grievance redress and participation in decision making the Bill provides space for workers to begin asserting themselves and mobilize themselves to demand and claim so much more.

Dealing with labour relations mediated through technology

Nearly all employer-employee relations are unequal on account of how inequitable the distribution of capital in our society is. This inequality serves as fertile ground for exploitative practices to take root and perpetuate. In the case of platform based gig work, capital has found itself a loyal ally - technology. Together they have given rise to instruments of worker oppression that we have not seen before.

- Gamification, a seemingly innocent marketing technology, has become omnipresent in the way platform based gig work operates today. Its use in influencing consumer preferences and behaviors are now well understood, even if its reach remains largely unresisted. There is a very blurry line between engaging in gamified actions that are beneficial for ourselves (such as completing 10,000 steps in a day with the help of our smartwatches) versus us engaging in gamified actions that are in fact beneficial to the company (such as ordering food items according to the discount coupons announced by the aggregator). While the line between being guided, and being a slave to someone else's intention, is very clear and hard to miss, its manifestations in the gamified digital universe are blurry. Platform based gig work has subjected its workforce to gamification. Workers can earn a bronze badge on completing x deliveries, and a gold badge by completing x + y deliveries. The color of the badge determines how flexible their work allocation can be, how superior their incentives will be, and the extent of medical and accident insurance they are protected by. Discussions with workers throw light on instances when those with "gold badges" had to take leave from work due to illness, and returned only to find out that the medical claim they were eligible for is no longer accessible to them because the loss of workdays led to them being demoted to the "bronze badge".[84] We have entered a work arrangement where along with consumers, even workers are subject to preference alterations. This burden put on workers to please customers is unprecedented. The relentless strive for ratings that maintains their position, however fleetingly, within the platform has fueled the mindless "customer is god" syndrome. Insisting deliveries be dropped in high floors of apartments, threatening with poor ratings are no longer just anecdotal evidence. And no amount of actions like offering glasses of water as reminded by the aggregator advertisements corrects for it. Customer obsession is eclipsing worker rights and placing irrational constraints on them.

- The digital platform has mastered the act of atomizing work to prevent workers from building a collective identity. Built into its design is individualization of labour (what other work arrangements do that? Service sector). A worker picks up his/her parcel from the dark store and delivers it to a house. There are no collective rest breaks, no collective reflection on cumulative earnings made to the company based on their labour. In fact, there are limited chances of a worker knowing who else from his/her neighborhood also works with the same platform. The operations are designed to prevent collective mobilization of workers at every stage – allocation of work, tracking of work, certification of work being completed, payment of work and performance rating of work. In no stage can a worker know anything about another worker. This prevents conscientization that is critical for workers to examine the causes of their oppression and change things for the better.

- The arrival of the big boss i.e. the algorithm: The algorithm has birthed the perfect manager with devoted allegiance to the interests of the company. And this in turn has birthed new waves of exploitation. We are now beginning to see how the algorithm is going beyond ensuring compliance of work with operational codes. It is now implementing decisions that are resulting in wage theft, discrimination and violating worker rights.

[85] Unique delivery partners identified by their national identity proof who successfully delivered at least one Order in India in that month - Zomato Annual Report FY 2023

- Majority of platform based gig workers rely on incentives paid over and above fees earned through services. These incentives are provided by the aggregator upon completion of a target number of services. The algorithm however comes into play and starts preventing allocation of work duties to those workers who are close to reaching the target number of services , so that they need not be paid incentives.

- Platform based gig work prides itself as being a flexible work arrangement. In fact, the ability of workers who engage with the platform to decide when to and when not to accept work orders is cited as the fundamental reason behind the aggregators not recognizing them as employees, and instead passing them off as self-entrepreneurs. "Auto assign" function introduced by an aggregator providing home based services cuts right through this defence. Through this functionality, the algorithm as the name suggests automatically assigns tasks to onboarded workers without giving them a chance to agree or disagree, in order to satisfy customer requests.

- Terminating work, either temporarily or permanently, through blocking of IDs is another example of how faceless algorithms are deployed to take anti worker measures. The aggregators enumerate instances which can trigger termination of IDs in their contracts. However, the sheer act of violating basic principles of natural justice and not providing workers prior notice and not allowing them the right to being heard whilst decisions that affect their life and livelihood are being taken, are outright illegal. It is also no surprise that the same tactic of blocking IDs is used to suppress protests and dissent.

- Enormous amounts of customer data generated through aggregator apps claim to be used to "serve customers better". But it is actually being used to profile customer behaviors to eventually modify customer preferences that suit the interests of the aggregator. The data of workers is also being used against the interests of workers. This includes instances of denying incentives payable to workers, identifying workers engaging in organizing protests and mobilizations through their location identity and blocking their IDs.

Worker oppression in the case of platform based gig work has become all the more dangerous because it sustains itself on an endless resource i.e. digital technology that can magnify its ramifications on tilting the balance of power against the worker endlessly, and on loop. The aggregator companies have used their codes and algorithms to not only suppress worker rights but also create a digital veil obfuscating the sight of the customers towards the oppression. Had it been an old-school contractor getting workers to renovate a kitchen while beating them for every water or food break they would take, the customers themselves would make a huge issue out of it! It happens precisely that way today but behind the garb of technology and without any acknowledgement from the customers.

The issue also presents us an opportunity to demonstrate how the very same digital technology that is being used to exploit workers, can be reimagined and repurposed to instead ally with workers and help them claim their rights. The Rajasthan Gig Workers Act and the Karnataka Gig Workers Bill both envisage the beginning of this attempt. First illustration is the mandate of "auto-registration".

One of the biggest limitations in most of the pro-labor legislations and labor jurisprudence in India is that the "burden of proof" is often put on the workers where they have to provide proof of their vocation and history of work - may it be the Construction Workers, Domestic Workers, or Street Vendors to name a few, all these workers who are not just unprotected but are also the most marginalized amongst the informal workers. Digital technology that is being used by platforms to provide their services can become their defacto proof of work and the burden register workers come on the employers instead of the employees. This is a unique case in point and opportunity for the global labour movements to take a big leap in terms of ensuring recognition and registration of a large number of very marginalized workers without burdening the workers to prove their vocation.

The second illustration is how revenue for social security can be sourced by taking advantage of digital operations. When every part of the work activity from work allocation, to work tracking, to certification of completion of work and payment for work completed is digitized, it is possible to deduct a welfare fee on every payout to a worker at every stage of the operations where a payment is made to the worker on a piece rate basis. And the digital architecture based on which the platform-based gig economy operates enables this triangulation by design. Imposing a welfare cess fee per payout to the worker enables granularity in the cess collection and management. It helps workers be more aware of how much welfare cess fee is collected on the basis of their individual work output and how much benefit they are accrued. This also helps in enforcing concurrent accountability and monitoring in the collection and management of cess fees through the year. Worker wise data that indicates work output at a task/transaction level will be essential to provide social security as a function of work output. Without such transaction level data, it will be impossible to determine which worker has worked how much, which is necessary information in order to provide higher social security (in terms of specific schemes) for those who work more.

The third illustration is the concept of building a digital information system that can enforce a workers right to critical information that has a bearing on his/her livelihood. Platforms have insight into every aspect of the worker's performance, and often use it to the disadvantage of workers. Digital technology can be used to make transaction level data available to workers so they can have total transparency of payments, and how their labour contributes to the overall wellbeing of the company.

Accountability of the financial institutions that finance platforms

The core issue at hand in the case of the platform-based gig economy, where these digital labour platforms are run through a pyramid scheme of sorts, where one investor brings another to keep the flailing "gig economy" running is - how can in a perfectly competitive capitalist economy ever have companies recording net loss year after year and still continue to grow? It is one of the many indicators about the instability that they offer in the guise of "unicorns". At the core of enabling, financing and founding this "servant economy" is something much less tangible but substantial: what kind of an economy do we want to produce with our decisions? How far do we want to push the division of labour between (elite) educated high earners and people providing menial services for this class?

The financial incentives some of these apps provide are at times hard to resist, especially given the VC money that fuels them. But should it really be cheaper to have a delivery driver fetch a bottle of water for you and get it to you within 10 minutes, rather than going to the corner store yourself? The economy we are currently seeding is one where convenience for some is worth more than community and solidarity for all. It pits one class of unstably employed (gig) work 'entrepreneurs' against an often older, surely more established class blessed with safety and security, benefitting from a new choice of servant services.[15]

Being part of a campaign that advocated for and successfully got passed legislation for gig workers' social security in Rajasthan, the authors had the privilege of being a part of multiple consultations with representatives of the private sector (i.e. aggregators) in the room. It was a rare experience for civil society to directly engage with them in pre-legislative consultations, as it is more common for the private sector to lobby with the Government through more direct channels. These consultations were eye opening for multiple reasons. It was revealing to see how measures that would protect worker interest were persistently pitched as anti-business. Over the course of more than 15 consultations, not one aggregator representative categorically acknowledged that there was a problem with the work and pay conditions of workers and accepted that things should pan out differently. Their position was always to defend the status quo. A point that was repeated often was about how small their operating margins are, and how thinly finances hang in balance. We were told in meetings that increasing the fare amounts by as little as 2 rupees could "shift customers" , "burden an already unprofitable aggregator" . But no one confronted the question of why profitability ought to be recovered from the lowest in the rung.

This attitude towards workers not only reflects in their philosophy but also in practice. Despite being the only boots on ground for these app-based companies, not only do the workers have very poor access to any sort of social security, their pay outs are abysmal as well. To put this into context and In absence of any other credible publicly available information for the entire sector, we went through one of the key app-based aggregators - Zomato's - annual disclosure of accounts and financials. As per those records, Zomato, for the FY 2022-2023, has a fleet of 326,000 monthly active delivery workers[16] and Zomato's adjusted revenue[17] in the same financial year is Rs. 86.9 billion and out of that revenue Rs. 25,369 million (~33%) is paid out as "delivery and related charges"[18] annually. This would mean that an active delivery worker would earn Rs. 77,819 annually. Putting this into context, if an active delivery worker is working around 10 hours on average everyday (NCAER Report) for 25 days a month (actual monthly hours and numbers of days maybe higher), would mean ~Rs. 259 per day and ~Rs. 26 per hour! These are way below the dignified wages that a worker is entitled to, let alone the minimum wages. It is also important to note that these payouts do not include the fuel costs amongst other costs that a worker has to bear.

[15] Lenhard, J. (2021, August 9). VCs are financing an economy of servants. Sifted. https://sifted.eu/articles/servant-economy
[16] Unique delivery partners identified by their national identity proof who successfully delivered at least one Order in India in that month - Zomato Annual Report FY 2023
[17] Total monetary value of goods sold on the Hyperpure platform (net of any returns/ discounts) (+) actual delivery charges paid (net of any discounts) (+) other revenue - Zomato Annual Report FY 2023
[18] Delivery and related charges primarily include payouts1 to delivery partners for last mile deliveries across our food delivery and quick commerce operations. It also includes the delivery partner support cost and cost of consumables issued to delivery partners at the time of onboarding - Zomato Annual Report FY 2023

While Rajasthan law doesn't respond to all the issues faced by the gig workers and limits itself to the provision of social security along with other provisions mentioned above, recently published drafts of the Karnataka[89] and Jharkhand[90] Government's gig workers bills have provisions for income security, fair contracts, reasonable working conditions, and transparency in respect to automated monitoring and decision making systems. If Rajasthan law is a big step forward in protecting the rights of gig and platform workers, these drafts have been a leap in the direction of providing a worker- centric regulatory framework for the burgeoning gig economy.

Decent, dignified and secure work

This is connected to the larger point of the design of the economy and the options that the workers have. Gig economy is built and thrives on the premise that there are a large number of people in the society who will do piece-rate and unprotected jobs in inhumane conditions and, in most cases, against their interest. This kind of environment is enabled and fueled by neo-liberal policies that the Modi Government in particular has adopted. While urban living costs have skyrocketed, real wages of workers have stagnated. For an entire decade, India has seen a jobless growth of an unprecedented scale and size that has forced people in their youth to resort to doing piece-rate jobs such as gig work with app-based aggregator companies. Instead of providing a viable and sustainable livelihood option, the workers have been burdened even more with increase in mobile data costs, fuel costs, and rising cost of their EMI payments for 2-wheelers and 4-wheelers that are bought to effectively participate in the gig economy.

While many of us have been advocating for legal frameworks to protect the rights of gig workers, we fully understand and acknowledge that the issue is much more structural and complex, requiring a more systemic solution. We believe there is a strong need for an alternative macroeconomic design to provide decent, dignified, and secure work to a large number of people who are looking for one through a public option and that is where an Urban Employment Guarantee, like MGNREGA but for the urban, is required. There have been several proposals that have been prepared, including draft legislation for the same, that incorporates various options for various categories of workers. If we think for existing gig workers, a public option like UEG can lead to creation of many unique services that can be provided to the society as per local needs at affordable rates while ensuring income security and sustainability for the workers. Digital technology in such cases can be designed to be more equitable and accessible. Not only will such a policy intervention provide a strong alternative to people looking for work, it shall also strengthen the overall health of the economy through sustainable rise in wages, social security, and improved urban resilience.

[89] Department of Labour. (2024, June 29). The Karnataka Platform Based Gig Workers (Social Security and Welfare) Bill, 2024. [Draft notification]. Government of Karnataka. https://ksuwssb.karnataka.gov.in/storage/pdf-files/draftnotification.pdf

[90] Department of Labour, Employment, Training and Skill Development, Government of Jharkhand. (2024, July 1). The Jharkhand Gazette: Gig Worker Social Security Notification [Extraordinary Gazette]. http://shramadhan.jharkhand.gov.in/ftp/WebAdmin/documents/Gig-worker-social-security.pdf

Occupational hazards faced by workers

While many studies have documented the plight of gig workers in terms of income security and work conditions, what is still not accounted for is the impact of weather shocks on platform based gig workers. Delivery riders are exposed to extremely high levels of pollution due to the long hours spent on the road. While the merciless heat wave has not spared any class of outdoor workers, its implications on platform based gig workers requires urgent intervention. Driving on the roads during the worst heat

hours of the day; phones hanging because of the extreme heat, leading to their inability to follow maps, or accept fresh orders; no designated rest, hydration and ventilation shelters available through their work route are just some examples of how workers are struggling to service our needs within minutes. No aggregator has introduced a heat wave policy for its 'partners'. But it is no surprise given that the Government of India itself has not come out with a policy to protect workers from the hazardous impact of the ongoing heat wave

Not every ill can be corrected by progressive policy. A glaring "gap" that needs work is the moral responsibility of consumers. In the era of hyper deliveries of every basic need and service needed, we need to question consumption patterns that fuel the platform based gig work industry. Are these VC backed platforms catering to a felt need of consumers, or creating one? Are they studying preferences or creating them? Why do we need groceries, food and flowers delivered in minutes? The story will soon become similar to the climate change problem, where our lifestyles, demands and consumption patterns are fueling industries to produce and consume resources the way they do, and hence pollute the way they do. But the consumer class believes the issue of global warming and dealing with hazards of climate change ought to be everyone else's responsibility but ours. Similarly, our consumption patterns are the ones giving sanction to platforms for behaving the way they do, yet it will be everyone else but us who should be responsible to ensure the welfare of workers. This dichotomous relationship will need to end at some point.

Platform based workers across the world have shown tremendous courage in fighting against the injustices meted out to them. They are resisting and doing so at huge costs to their livelihood, health and security. Across the world, there have been strikes, many spontaneous and with no union supporting them; workers and unions have challenged malpractices in labour courts and judicial courts. Social media and whatsapp -have been critical tools for their resistance. The past four years have seen multiple developments in the world for ensuring rights of gig workers. Laws, directives, judicial pronouncements have paved the way for recognizing them as a class of employees, making aggregators and the State responsible for bringing them under social security cover and protecting their rights of collective bargaining. But there is still a long way to go. As always, it will be them , the ones with their backs to the wall, who will show a way forward for all workers to benefit and not just themselves

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- **Lenhard, J.** (2021, August 9). *VCs are financing an economy of servants.* Sifted. https://sifted.eu/articles/servant-economy
- **Department of Labour, Employment, Training and Skill Development, Government of Jharkhand**. (2024, July 1). *The Jharkhand Gazette: Gig Worker Social Security Notification* [Extraordinary Gazette]. http://shramadhan.jharkhand.gov.in/ftp/WebAdmin/documents/Gig-worker-social-security.pdf

Capital and Labor in the Digital Age: The Rise of Digital Labour Platforms

Sabina Dewan

Capital and Labor in the Digital Age: The Rise of Digital Labour Platforms

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Economic development is characterized as a shift from low levels of productivity as in an agrarian economy that relies on subsistence farming, to higher levels of productivity as in an industrialized economy dominated by services[91]. The pursuit of this structural transformation and service-led growth in India hinges on the adoption and use of technology as a necessary -- though not sufficient -- tool to help deliver services efficiently and at scale[92]. This has created the opportunity for investors and entrepreneurs to leverage private capital to build technology-based solutions that cater to the domestic and international demand for services.

Digital platforms are one such technology-based solution. From Business Process Management and logistics, to the delivery of food and personal care at home, digital platforms are increasingly becoming the foundational architecture for the delivery of services[93]. Digital platforms can broadly be defined as interfaces that rely on the internet to connect consumers to providers of various types of goods, services, or information, through a technology-based application[94]. Many digital platforms are for- profit, internet-based companies ranging in size and business models. Usually run by entrepreneurs and managers, rely on investors that, in-turn, seek dividends.

Digital platforms, that are increasingly underpinning India's service-led growth, are both fuelling, and being fuelled by, the hyper-financialization that has come to characterize the global economy in recent decades[95]. In this era, leveraging of private capital to drive bottom-line profitability is, sometimes un-wittingly, pitted against the wellbeing of labour. Labour platforms[96] – a subset of digital platforms[97] -- provide an illustration of this phenomenon.

Discourse on the rising influence of capital and its growing share of income, and labour's waning power and declining share of income, is not new. But how emerging economic trends, such as the evolution of the digital platform economy, reinforce these imbalances has not been investigated deeply enough. This paper examines how digital labour platforms are symptomatic of an economic system that favours capital over labour. It provides some suggestions on how governance of digital labour platforms can be strengthened to rectify imbalances and to prioritize equitable and inclusive economic growth by promoting worker wellbeing.

[91] OECD. (2017). Services Trade Policies and the Global Economy. OECD Publishing. https://doi.org/10.1787/9789264275232-en

[92] Dewan, S., Krishnamurthy, M., & Taneja, D. (2022). Digitalisation and the Indian labour market: Trends, challenges, and opportunities. GIZ. https://www.bmz-digital.global/wp-content/uploads/2022/09/GIZ_2022_Digitalisation-and-the-Indian-Labour-Market.pdf

[93] Dewan, S., Krishnamurthy, M., & Taneja, D. (2022). Digitalisation and the Indian labour market: Trends, challenges, and opportunities. GIZ. https://www.bmz-digital.global/wp-content/uploads/2022/09/GIZ_2022_Digitalisation-and-the-Indian-Labour-Market.pdf

[94] There is no internationally agreed terminology or definition of what the platform economy is and various terms are used, including: "collaborative economy", "peer-to-peer economy", "gig economy", "on-demand economy" or "platform economy". The term platform economy emphasizes the fact that its activities are conducted through a digital platforms, which has been described as "digital infrastructures that enable two or more groups to interact [and] position themselves as intermediaries". Taking a similar approach, the Organisation for Economic Co-operation and Development (OECD), ILO and Eurostat Handbook on Measuring Digital Platform Employment and Work describes digital platforms as "digital interface or an online service provider … positioned between the providers of the services or goods and their clients".

[95] Dafe, F., Naqvi, N., Hager, S. B. & Wansleben, L. (2022). Introduction: The Structural Power of Finance Meets Financialization. Politics and Society, *50*(4), pp. 523-542. https://doi.org/10.1177/00323292221125563

[96] Labour platforms connect businesses and clients to workers, either by acting as an intermediating entity or by directly engaging workers, to provide location-based or web-based services. The demand and provision of services is often task-based. Service providers that engage in this task-based work are called gig workers. Labour platforms intermediate the relationship between the consumer and service provider in several ways including facilitating the collection of payment and its disbursal to the worker. In the process, labour platforms manage several aspects related to working conditions and terms as per individual contracts.

[97] Dewan, S., & Sanyal, K. (Eds.). (2023, May). Empowerment or Exploitation: Global Perspectives on Women's Work in the Platform Economy. JustJobs Network. https://www.justjobsnetwork.org/files/empowerment-or-exploitation-global-perspectives-on-womens-work-in-the-platform-economy_may-2023.pdf

A rigged game: Investing in Digital Labour Platforms

A majority of private sector, for-profit labour platforms are financed by venture capital and private equity investors. These investors have an incentive to invest in a large portfolio of companies at the startup stage knowing that most investments will fail. The high failure rate for technology start-ups in India is well known with estimates ranging from 90 to 95 percent of start-ups failing within the first five years.[18] Yet investors pour in capital based on the understanding that just a few successful platforms could provide outsized financial returns. Even though most investments will likely fail, those that are successful will cover the losses incurred by the failed startups and could provide significant profits. This is the gamble investors make.

It is an established practice that startups must gain market share rapidly during their initial years, even if this gain in market share comes at a significant financial loss initially. A large market share matters not only because it provides access to a larger pool of consumers, but also so that the platform can beat the competition in getting a foothold. In the emerging platform economy, a large market share ensures that a platform can establish itself as a dominant player and can dictate the terms in the emerging ecosystem. The understanding behind this loss-leading approach is that once the platform has gained a leadership position in the market it will be able to dominate the ecosystem of consumers and service providers and play a key role in the pricing of services.

With these incentives in place, platforms provide significant rewards and discounts to consumers and service providers to sign-up and start using the platform[19]. These practices of providing deep discounts tend to distort the existing market pricing and structure as consumers transition to the platform. Service providers are compelled to follow consumers to the platform. Eventually as more consumers and service providers move to the platform, a new market structure is established with the platform as the dominant player. At this stage, the platform has enough pricing power to start increasing the commission rates and prices.

Such financial and business models have adverse implications for labour. First, investment fuels many platforms that ultimately fail. When this happens, not only are any direct employees out of work, but so are large numbers of gig workers that are deployed by these platforms. Information asymmetries mean that workers are unaware of the uncertainty built into the system from the start. In this way, the gig economy is adding to labour market volatility and uncertainty. Second, the platforms that do survive also tend to be the ones that capture significant market share and crowd out competitors. This consolidation means that the platforms that are left standing can dominate the ecosystem and can set their own standards in the market. Third, this consolidation also means that platforms have a larger pool of labour to source from, adding to their ability to set the terms of engagement in, for instance, commission rates, prices, and other conditions of work for platform workers.

[18] Mehrotra, N., Patrao, C., Marshall, A., Banda, M., & Singh, R. R. (2016). Entrepreneurial India: How startups redefine India's economic growth. IBM Institute for Business Value. https://www.ibm.com/downloads/documents/us-en/10c31775c8540225

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Work and Workers on Digital Labour Platforms

Like most businesses, for-profit digital labour platforms are driven by bottom line profits and the need to deliver dividends to investors. But unlike traditional businesses, these platforms operate on a different model altogether -- one that, several studies confirm, is not conducive to worker wellbeing, and the unprecedented nature of which makes it hard to regulate.[100]

Labour platforms are considered to be mediators of transactions that connect service providers to consumers. With a youth population of approximately 370 million[101] and a dearth of good jobs to accommodate new labour market entrants, labour platforms provide an attractive avenue for income generation. Niti Aayog estimates that the number of gig workers in India rose from 6.8 million in 2019-2020 to 7.7 million in 2020-21 and is projected to increase to 23.5 million by 2029-30.[102] Capitalising on India's labour surplus, these labour platforms engage a large number of workers as self-employed, independent contractors, or partners, rather than employees.[103] The labour platforms are not considered to be employers of these gig workers. This is why, unlike in a traditional employer-employee relationship, labour platforms are not subject to labour regulations including the obligation to provide entitlements to the gig workers they engage. Self-employed workers are responsible for purchasing, or accessing, their own insurance and entitlements.[104]

In the traditional managed economy, the state regulatory architecture manages practices, but in a world where service delivery is mediated by platforms, it is the platform company that decides who can be on the platform; what is considered good behaviour; and what entitlements they provide to workers.[105] The work on labour platforms is largely governed through commercial contracts for the provision of services, rather than contracts of service under labour law. The terms of the contract between the workers and the labour platform determines the conditions of work including defining aspects like pricing for the provision of client services, incentive structures, and working time, often resembling a traditional employer. Yet, labour platforms are not legally regarded as employers.

Another unique facet of digital labour platforms is their use of algorithms -- mathematical formulas that use data to help platforms optimize business processes, to help with matching clients with workers, pricing tasks, or for ratings and rankings among other uses. If algorithms are based on data that is biased or unbalanced, then the output will also be so. Even apparently neutral algorithms can give rise to indirect discrimination exacerbating discrimination and inequality.[106] In addition to the possibility of such discriminatory biases, a lack of transparency with respect to platform algorithms create information asymmetries that disadvantage workers and make it hard to govern platforms. It is difficult to gauge the quantity and time of work made available to platform workers; how remuneration is calculated and what deductions are made; ratings of workers; sanctions applied to workers; as well as downgrading or de-activation of workers by the platform. There is also a lack of disclosure about the nature of data that algorithms collect; how this information is used; and what for.[107]

[100] International Labour Organization. (2021). World employment and social outlook 2021: The role of digital labour platforms in transforming the world of work. International Labour Office. https://www.ilo.org/global/research/global-reports/weso/2021/lang--en/index.htm

[101] National Statistical Office. (2022). Youth in India. Ministry of Statistics and Programme Implementation, Government of India. https://mospi.gov.in/sites/default/files/publication_reports/Youth_in_India_2022.pdf

[102] NITI Aayog. (2022). India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work. Government of India. https://www.niti.gov.in/sites/default/files/2022-06/25th_June_Final_Report_27062022.pdf

[103] Berg, J., Furrer, M., Harmon, E., Rani, U., & Silberman, M. S. (2018). Digital labour platforms and the future of work: Towards decent work in the online world. International Labour Organization. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_645337.pdf

[104] Fairwork India. (2020). Fairwork India Ratings 2020: Labour Standards in the Platform Economy. https://fair.work/wp- content/uploads/sites/131/2020/12/Fairwork_India_2020_report.pdf

[105] Acs, Z. J., Szerb, L., Song, A. K., Komlósi, É., & Lafuente, E. (2020). The digital platform economy index 2020. The GEDI Institute. https://thegedi.org/wp-content/uploads/2020/12/DPE-2020-Report-Final.pdf

[106] European Union Agency for Fundamental Rights. (2022). Bias in algorithms: Artificial intelligence and discrimination. Publications Office of the European Union. https://fra.europa.eu/en/publication/2022/bias-algorithms-artificial-intelligence-and-discrimination

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Work and Workers on Digital Labour Platforms

What data do digital labour platforms collect on platform workers and how they use this data? The asymmetry of information gives platforms the upper hand rather than workers to whom the data belongs to. There are concerns around data privacy but also around the ability of platforms to monetize this data.

Moreover, traditional forms of organizing, freedom of association and collective bargaining, are not accessible to self-employed workers in the same way as they are to workers in traditional employer-employee relationships. The geographically dispersed or untethered nature of this form of task-based work makes collective action more difficult. Lack of transparency in algorithms and concerns around data collection and privacy weaken the bargaining power of labour. In theory, platforms bring together individual workers into their registry and could potentially ease the provision of social protection or support organizing;[108] but self-employed gig workers do not have legal access to freedom of association and collective bargaining. Collectivization among platform workers remains weak.[109]

On Governance

The unprecedented proliferation of platforms; their diversity and dynamism; the speed with which they are becoming the new architecture for economic transactions with many operating across international borders and legal jurisdictions – all of this makes their governance and regulation very challenging. Yet better governance of digital labour platforms – and technology at large – is an essential step toward rebalancing the relationship between capital and labour and precipitating a structural transformation that translates into better human development outcomes.

There is a need for comprehensive legislation governing the gig economy. Some states including Rajasthan, Karnataka, and Tamil Nadu have already been working on this, but others must follow suit. But in addition, there has to be coherence and coordination across legislation to avoid rent seeking. There is also a need to see where and how other legislation such as the Data Privacy law intersects with proposed regulation for the gig economy to ensure coherence.

International experiences with gig economy regulation address issues such as: classification of platform workers; governing algorithms; remuneration; working time; equality and non-discrimination; occupational safety and health; social security; dispute settlement and redressal; data use, sharing, privacy and protection; as well as voice and representation. These experiences can provide guidance on how India might go about doing so.[110]

Existing tax structures are not equipped for the digital economy.[111] This poses many many challenges. For instance, there are difficulties in identifying taxable digital activities when companies run their business in one country with a physical presence in a different tax jurisdiction.[112] There is also a lack of clarity in domestic tax laws on how to tax platforms for mediating transactions between service providers and consumers.[113]

[108] OECD. (2023). Digital labour platforms: Opportunities and challenges for formal employment. In Informality and globalisation: In search of a new social contract (Chapter 5). OECD Publishing. https://doi.org/10.1787/c945c24f-en

[109] Dewan, S., Krishnamurthy, M., & Taneja, D. (2022). *Digitalisation and the Indian labour market: Trends, challenges, and opportunities.* GIZ. https://www.bmz-digital.global/wp-content/uploads/2022/09/GIZ_2022_Digitalisation-and-the-Indian-Labour-Market.pdf

[110] International Labour Organization. (2024). Realizing decent work in the platform economy (ILC.113/Report V(1)). International Labour Conference, 113th Session. https://www.ilo.org/sites/default/files/2024-07/ILC113-V%281%29-%5BWORKQ-231121-002%5D-Web-EN.pdf

[111] Mullins, P. (2022). Taxing developing Asia's digital economy [Background paper]. Asian Development Bank. https://www.adb.org/sites/default/files/institutional-document/782851/ado2022bp-taxing-developing-asia-digital-economy.pdf

[112] Asian Development Bank. (2021, February). *Asian economic integration report 2021: Making digital platforms work for Asia and the Pacific.* https://doi.org/10.22617/TCS210048-2

[113] Mullins, P. (2022). *Taxing developing Asia's digital economy* [Background paper]. Asian Development Bank. https://www.adb.org/sites/default/files/institutional-document/782851/ado2022bp-taxing-developing-asia-digital-economy.pdf

From a digital service tax, to withholding taxes and double taxation treaties, there is a need to reform the international tax system such that it applies to the digital economy. There is a need to improve international tax cooperation and harmonization so the profits generated in the digital economy can be captured properly.[114]

At the domestic level, the Code on Social Security and subsequently Rajasthan's Platform-Based Gig Workers (Registration and Welfare) Act, 2023 proposed charging a cess on platforms. The latter specified that this would be 1 - 2 per cent of every transaction. While this would still run into problems of how one would tax a digital labour platform that operates in one state but is registered in another, proposing to charge a cess is a step in the right direction[115]. Central and state governments must take this forward with a coherent cross-country framework and implementation.

Funds from taxation, along with other contributory and non-contributory mechanisms, can help finance a social security system that provides basic entitlements to workers, including gig workers, with a gradually expanding remit.[116]

For clarity with respect to taxation and to enable access to entitlements for workers, there is a need to resolve the legal and statistical definitional ambiguities clarifying the classification of platform workers as either/when they are employees and/or self-employed.

Agreements between government and platforms on data use, sharing, privacy and security are critical to addressing key concerns around algorithmic bias, data privacy and control. Meanwhile, the periodic labour force survey should consider adding questions to measure digital, platform-based, work.

Last, but not least, recognizing the right to freedom of association and collective bargaining is essential to rebalancing the influence of capital and labour. These rights must be entrenched in law that is effectively implemented across sectors including in the world of digital labour platforms.[117]

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The Contours of Digital Finance and Platform Economy: The lack of regulatory mechanisms in the digital/e-commerce space

Tejasi Panjiar

The Contours of Digital Finance and Platform Economy: The lack of regulatory mechanisms in the digital/e-commerce space

Tejasi Panjiar

The incumbent government's promise and vision of making Digital India a reality has led to fundamental shifts in the use of technology for public service delivery. Encompassing multiple projects and initiatives, the Digital India programme aims to transform India into a "digitally empowered society and a knowledge-based economy".[118] With the backing of this programme, technology has managed to penetrate, and in some instances even dominate, most sectors. Examples of some sectoral open digital ecosystems include the National Digital Education Architecture (NDEAR), the National Health Stack (NHS), the Account Aggregator Framework, and the India Digital Ecosystem for Agriculture (IDEA), also colloquially known as Agristack, for the educational, health, financial, and agricultural ecosystem respectively. These open digital ecosystems are meant to form the foundational components for various sector-specific policies or initiatives.

Regulatory gaps in the journey towards digital financial empowerment

Much like all other sectors in the country, the financial sector has undergone tremendous transformation over the past decade. Aimed at bolstering financial inclusion, the government has adopted several Digital Public Infrastructures (DPI) at scale, such as the Unified Payment Interface (UPI), Aadhaar, Data Empowerment and Protection Architecture (DEPA), and Digilocker, etc. Aadhaar, which is an unique and universal identifier for identifying and authenticating beneficiaries to carry out targeted service delivery, has been widely adopted by the government in various sectors and schemes. UPI, India's digital payment platform, has onboarded 581 banks and facilitated transactions worth ₹19.6-lakh crore till from April 2016 till April 2024. The share of UPI transactions has reached close to 80% of the total digital payments in 2023.

Aimed at streamlining the identity verification process for all government departments and agencies, the IT Ministry proposed DigiLocker as a "one-stop solution for reconciliation and updating of identity and address of individuals maintained by various government agencies, regulators and regulated entities".[119]

Adoption and expansion of such Aadhaar-based services may lead to data privacy and exclusion concerns given the long and rich data leak history of Aadhaar. Data security risks are further compounded because of the sensitive biometric data stored in the Aadhaar database, such as iris scans, photographs, fingerprints.

[118] Press Information Bureau. (n.d.). Achievements Made under Digital India Programme. Accessed May 9, 2024. https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1885962
[119] Verma, D. (2024, February 2). Budget 2024 and digital rights [Part I]: How we utilised the 2023-24 Budget, and how we didn't. Internet Freedom Foundation. https://internetfreedom.in/budget-2024-part-1/

Adoption and expansion of such Aadhaar-based services may lead to data privacy and exclusion concerns given the long and rich data leak history of Aadhaar. Data security risks are further compounded because of the sensitive biometric data stored in the Aadhaar database, such as iris scans, photographs, fingerprints.

Although India's privacy law, the Digital Personal Data Protection Act (DPDPA), 2023 has been adopted, the rules which would make the law functional are yet to be released. Thus, it is clear that any collection, storage, and processing of data for these DPIs will be done in the absence of adequate safeguards for user privacy as well as no governance mechanism with clear lines of accountability. Additionally, with the rising instances of cybersecurity attacks and data breaches in government infrastructure, it is crucial that robust data protection legislation is implemented as opposed to the one currently adopted which provides extensive exemptions to government instruments.[120]

Disrupting e-commerce and delaying governance

The latest digital ambition of the government is the 'Open Network for Digital Commerce' (ONDC), which is a government backed technology infrastructure where buyers and sellers transact irrespective of the platforms/ applications they use as long as platforms/ applications are connected to the open network.[121] The ONDC gained popularity due to its different approach to the e-commerce sector and its aim to break down market distortion and concentration of power by businesses.[122] A not so popularised fact is that the company ONDC has a government led non-profit organisation as one of the shareholders and the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry contributed heavily in the setting up and adoption of ONDC. ONDC's registration as a private company, despite government's active involvement in the set up raises questions about the former's accountability towards customers.[123] Since it operates as a Section 8 company not having any underlying legislation, it falls outside the ambit of the Right to Information (RTI) Act, 2005.[124] This set up affects the user's ability to demand complete transparency from the company and redressal guaranteed in the constitution.

It is not just the absence of a regulatory framework for the ONDC which creates concerns, but also the lack of an operational, rights-advancing data protection legislation. The collection, storage, and processing of transaction data (exchanged between buyers and sellers), competitive data, and personal data in the absence of an operational data protection law raises privacy and data security concerns.[125] It is also important to note that citizens have constitutional rights against the state and not private entities.[126] Therefore, the emphasis on the private sector leveraging the financial potential of data possesses concerns of data maximisation and monetisation.

[120] Jain, A., & Waghre, P. (2023, August 3). IFF's first read of the draft Digital Personal Data Protection Bill, 2023. Internet Freedom Foundation. https://internetfreedom.in/iffs-first-read-of-the-draft-digital-personal-data-protection-bill-2023/
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Notably, the proposed e-commerce policy, which is under formulation, will not have provisions related to data security and privacy, and e- commerce entities will be expected to comply with the DPDPA, 2023.[127] ONDC is also designed to function in compliance with the DPDPA, 2023. Unfortunately, the current government's alignment of public projects with private interests and push towards digital governance in the absence of adequate safeguards will leave citizens with no remedies against exploitation of their right to privacy.[128]

Worker's woes in the platform economy

A big focus of ONDC is on breaking down the entry barrier in the e-commerce market and expanding the job market for gig workers. In theory, the open network model of the ONDC will facilitate multiple e-commerce partners on this open network, a model that can be leveraged by gig workers to connect with different retailers and get an opportunity to widen their reach.[129] While the intention is noble, it doesn't resolve the employment and regulation concerns faced by workers in the gig economy. The gig economy reflects the emergence of deregulated labour market structures. The companies/ platforms under this economy make these supposedly independent workers conform to rules and standards of the company, while denying them of any employee rights or social security. Gig workers are also often surveilled by platforms/ companies, paid extremely disproportionate wages, made to work under unsafe and high stress working conditions, and penalised with heavy monetary fines for the most minor infractions.[130]

The Rajasthan Platform Based Gig Workers (Registration and Welfare) Bill, 2023 introduced and passed in the Rajasthan Assembly in July 2023 empowers gig workers by affording them certain welfare related rights, a grievance redressal mechanism, and allowing for future notification of social security schemes.[131] The Bill, which gives gig workers statutory recognition and is a first-of-its-kind reform, has been welcomed and criticised in equal parts.[132] The Code on Social Security (CoSS), 2020, which proposes a similar approach as the Rajasthan Bill, is pending notification by the Ministry of Law and Justice.[133] In addition to the draft rules under the CoSS being notified by the union government, the state governments would be required to frame regulations as labour is a concurrent subject.[134] Impending regulation at the union level and lack of regulations at the state level contribute to an environment of regulatory delay and uncertainty.

It is not just the absence of regulatory intervention that contributes to concerns, but the inability of labour regulations and policy interventions to bestow the employee status on gig workers. For instance, the definition of gig workers given by the Niti Aayog in its policy brief titled 'India's Booming Gig and Platform Economy' has been criticised for being too narrow, especially in contrast to the definition under the Rajasthan Bill.[135] The lack of this recognition is indicative of a policy gap and will likely prevent workers from having access to income security and social protection benefits.[136]

[127] Economic Times. (2023, September 25). No proposal for independent regulator in proposed e-commerce policy: Official. https://retail.economictimes.indiatimes.com/news/e-commerce/e-tailing/no-proposal-for-independent-regulator-in-proposed-e-commerce-policy-official/103933605
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Data released by the National Council of Applied Economic Research (NCAER) in their report titled 'Socio-economic Impact Assessment of Food Delivery Platform Workers' reveals that 61.9% of workers received rations, 12.2% have an Ayushman Bharat card, 7.1% are registered on the e-Shram portal, and 4% are enrolled under the Atal Pension Yojana.[137] As per Niti Aayog estimates, 77 lakh workers were engaged in the gig economy in 2020-21 and is expected to expand to 235 lakh workers by 2029-30.[138] Thus, it is worth considering if gaps and delays in regulation impact a worker's ability to receive or claim welfare benefits. Given the dominance of the gig workforce in the economy, a regulation that recognises these workers as employees of the formal workforce and affords them social security and welfare benefits is the need of the hour. A regulation will also introduce accountability obligations and responsibilities on platforms employing these workers, to bring transparency in app algorithms, incentive systems, and payment mechanisms. It will also empower the workers to unionise and raise their voice against workplace surveillance, irresponsible processing of worker's data, and arbitrary deactivation of their accounts.

(Un)Ease of doing Digital Business in India?

For a market to thrive, it must establish a balance between innovation and regulatory compliances. Complex and high compliance obligations could lead to increased costs incurred by businesses, delays in adoption, and ineffective implementation.[139] A lack of regulation identifying compliance obligations would not necessarily be good for businesses either. In the absence of functional data protection legislation, many businesses may not have incentives to undertake security audits, data privacy measures, institute grievance redressal mechanisms, etc. which in the long term may roadblocks for businesses. As traditional businesses increasingly enter the digital market and adopt new age tools, our regulations need to evolve simultaneously so as to safeguard against potential risks. While on one hand we may require specialised sectoral-level interventions, we may also need overarching regulations to account for themes that cut across sectors, such as data protection. Identifying the policy gap of regulatory uncertainties both within and across sectors, and then implementing these regulations while balancing competing interests is a burdensome task but also extremely urgent.

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Prone to monopolization, and "funding winter": How fragile is the new age tech economy

ROHIN GARG

Prone to monopolization, and "funding winter": How fragile is the new age tech economy

Rohin Garg

Broadly over the past year and a half, the global tech economy has seen a genuine funding winter, a process accelerated by the collapse of the Silicon Valley Bank (SVB) in March 2023.[140] This can be witnessed even within the global hubs of the digital economy: California's tech sector. Between August 2022 and March 2024, California has lost 21,000 jobs in computer systems design & related roles, 15,000 in streaming and social networks, 11,000 in software publishing, and 7,000 in web search & related roles, while having gained less than 1,000 jobs in computing infrastructure & data processing during the same period. Indeed, California's net job addition within the tech industry since the COVID-19 pandemic is only about 6,000.[141]

Moreover, the tech economy's global nature is based on a certain amount of interconnectedness between the tech sectors of various national economies, which ensures that when a slowdown takes place what may have otherwise occurred harmlessly as exogenous happenstance becomes a driver of an effectively endogenous funding shock. As a result, the Indian tech economy has also been afflicted by this malaise: at the aggregate level, venture capital investments shrunk from $26 billion in 2022 to just $9.6 billion in 2023 as global finance capital began to focus on profitability and overvaluations began to deflate.[142] Investments in consumer tech declined 70%, in fintech by 50%, and in the software and SaaS (Software as a Service) sector minus AGI (artificial general intelligence) by 70%, with edtech, digital gaming, and healthtech especially impacted.[143] Two key regions, Karnataka and Gujarat, saw steep falls in funding by 72% and 66% respectively last year.[144] The slowdown wasn't confined to 2023 either: between January and March 2024, funding in India's tech sector fell to $1.6 billion (compared to $3.2 billion during the same period last year).[145] Besides the raw financial figures, further evidence of a more general slowdown in the tech sector can be seen from the rising twin tsunamis of companies shutting down and large scale layoffs recently: over 35,000 startups in India were shut in 2023, while startups that were still operational laid off more than 20,000 people.[146]

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The roots of the slowdown

One of the most direct factors is the end of the 'ZIRP' (Zero Interest Rate Policy) regime that had been propagated by the American Fed to boost the American economy after the Great Financial Crisis of 2008. Under ZIRP, central banks set the interest rate to historically low levels, say 1%-1.5%, which after factoring in inflation effectively meant a 'zero interest rate'. The benefits of this policy can be seen by the colossal jump taken by the tech sector in the global economy: all the now ubiquitous paraphernalia of the internet age, from Google to smartphone and iphones, truly became a mass phenomenon during the age of ZIRP, which meant vast amounts of capital to be funnelled towards the rapidly growing tech industry, allowing those working in tech to enjoy cushy jobs and high salaries. However, the ZIRP era came to a definitive end around 2021-22, as central banks (led by the Fed) felt the need to raise interest rates to fight COVID-19 induced inflation. Even in countries like India, which technically had a low interest rate regime rather than 'ZIRP', partly because of the need to follow the Fed to prevent the flight of finance capital and partly out of their own need to fight inflation, interest rates were significantly elevated (as can be seen by the RBI's decision to set key rates at 6.25%-6.5% versus say 4% in early 2022)[147]. Naturally, given that it was ZIRP that begat the predominance of the tech industry, the raising of interest rates was a severe blow. Layoffs and shutdowns began to surge, while those still operational witnessed an acute tightening of belts[148]. Indeed, one of the key reasons cited for the collapse of SVB was the end of ZIRP,ivia the twin pincer of startups needing to withdraw more money from their main holding accounts to address liquidity issues and higher interest rates leading to unrealised losses in investments[149]. As more and more funding sources dry up, a backreaction is set in place, wherein low funding causes many digital startups to collapse which diminishes the portfolio of investors holding assets in the digital economy and further reduces their appetite to fund further such ventures.

What's more, tech startups are markedly sensitive to interest rates in the first place since most 'tech' firms, at least the non-hardware ones, are not profitable. As the data on unprofitability has been covered elsewhere, we shall not go into this further here, except only to highlight a recent example:[150] ahead of its impending IPO, Swiggy undertook significant layoffs, firing more than 600 people, and still suffered a 15.2% increase in losses in FY23[151]. Digital platforms also display a tendency towards monopolisation even more pronounced than that under industrial capitalism: consumer acquisition and initial costs are high and justified on the basis of a large consumer base, and so more and more of a company's resources are focused towards obtaining an ever larger market share. Various competitors then compete for the same market share which, though large in aggregate terms, is chiefly limited to the 8-10 large metropolises outside which the purchasing power to purchase many of the digital goods/services does not exist. Eventually, as certain big players emerge (though even they may not always be profitable, such as in the ride hailing industry with Uber India, Ola, Rapido et al), the remaining firms run the risk of falling by the wayside. Those who survive are forced to either take risky decisions or to change key components of their business model - consider BluSmart's recent decision to introduce surge pricing, despite its initial promise to never do so.[152]

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A tempered future

Now, it is certainly the case that the existing market, corresponding roughly to about 20-25 million Indians (the richest 1.5-2% of Indians), will continue to be regular customers for the tech industry, and the tech industry will likely not suffer any output decline in the aggregate (as an example the ecommerce market in India is projected to reach Rs 12,530 billion by FY28)[153]. However, low demand conditions aren't likely to change at the pan India level. To start with, despite its massive growth, ecommerce constituted only 7% of the Indian retail market in FY23, a figure which is projected to reach only 12% even in FY28 (compare this to 32% penetration in FY23 for China)[154]. Moreover, according to RBI's Database on Indian economy, net financial assets of households have declined between 2018 and 2023 even after the Central Government's large scale income support during the COVID-19 pandemic[155]. The largest component of the increased debt consists of unsecured personal loans suggesting that consumption is being sustained by debt[156]. Furthermore, the industry itself is being forced to accept this fact: Zomato withdrew its operations from 225 smaller cities across India due to a 'not very encouraging performance'[157]. This is not just an Indian phenomenon either: the Turkish instant delivery platform Getir recently exited the USA, UK, and EU markets[158].

Regulatory headwinds also seem to be in the offing. For instance, the EU's recently passed Platform Work Directive provides digital platform workers with recognition of salaried employment, thus potentially opening the way for recognition under labour law[159]. Meanwhile in the UK, Uber faces a legal case being brought on behalf of London black-cab drivers over their licence to operate in the city[160]. Closer home, the Government of Karnataka has laid down a fixed price structure for all taxis, bringing ride hailing apps under the domain of the uniform fares and eliminating surge pricing[161]. Even sub-sectors like Fintech are not immune to this, as seen by the regulatory crackdown on nonbanks in the US and the RBI's recent directive for lending institutions to increase capital adequacy ratios for unsecured loans[162][163]. Such sub-sectors have also failed to clear systemic bottlenecks that act as a drag on the system. For example, in America, despite the rise of fintech, credit card companies have been able effectively leech " *trillion dollars in the market value of pure rents extracted by the credit card companies for the cost of processing payments*"[164]. Now while in India the rise of UPI and the 'India Stack' has done remarkably well at lowering such barriers, certain cracks are beginning to show: for one, the Central government subsidy to payment merchants in the UPI ecosystem may decrease or not be indefinitely sustained. Meanwhile, banks have started imposing daily limits on UPI transactions due to the piling up of unreconciled transactions, while the NPCI has cautiously announced an extra interchange fee on certain merchant transactions. Zomato's voluntary surrender of its licence to operate as a payment aggregator after the RBI announced stricter KYC norms, just months after Zomato obtained its licence, may be a leading indicator of the effect of the regulatory 'chill'[165].

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Two potential exceptions?

After years of burning through cash to capture market share, in 2022, Uber was cash flow positive for the first time for a quarter, soon after which it announced its first quarter of profit.[166] Last year, Uber was profitable for a full year for the first time.[167] Nonetheless, for all the celebration, the underlying numbers indicate that Uber is not out of the woods just yet. For starters, Uber sold off its unprofitable businesses in China, Russia, and Southeast Asia to local startups, for which it received not cash but shares in these extremely overvalued companies, and then used these shares with trumped valuations to show a profit on investments abroad.[168] Beyond this, Uber's Adjusted EBITDA metric was shown to exclude around a quarter of actual expenses.[169] That being said, Uber has genuinely demonstrated increased revenues in the past few quarters. Here too, though, one must pause for thought: Uber has withdrawn from many of its various maverick investments, pulled back services to high demand areas, and increased prices, (all strategies that the pre digital taxi services supposedly 'disrupted' by Uber used to employ) all factors which have contributed to increased revenues and may or may not be sustainable. But the other major reason for growth is likely to falter: a massive drop in driver commissions.[170] By employing 'dynamic pricing' that delinked a driver's pay from the fare paid, Uber systematically committed algorithmic wage discrimination, a strategy that amounted to transferring, conservatively, $1 billion from drivers to Uber.[171] As a result, Uber's 'take rate' from drivers crossed 30% for the first time in Q4FY24.[172] This must be seen in the context of Uber's broader business model, which hinges "entirely on driving the industry consolidation that might allow it to exert much greater anti-competitive market power over drivers and restaurants".[173] Indeed, Uber's IPO filings revealed that its long term business strategy was to comprehensively replace all public transport![174] That Uber reported a loss in the first three quarters of this year demonstrates that such strategies are not viable in the long term.[175]

The other exception is Zomato. About a year after Zomato's IPO, a few investors (such as Alibaba Group) began to sell off its shares in the then unprofitable company.[176] As a result, Zomato began to rationalise its operations, cutting costs in employee benefits expenses and advertising, while parallelly using the Gold membership to increase Gross Order Value (GOV) and retain existing customers.[177] These efforts bore fruit as Zomato finally declared a profit in Q1FY24. Furthermore, Zomato introduced a platform fee (Rs 5 per order as of April 2024) to further boost revenue, and so FY24 was the first year in which Zomato was profitable in all 4 quarters (by Q4FY24 even the hitherto loss making Blinkit turned a profit).[178] However, we note that as of Q3FY24, 90% of Zomato's GOV came from their top 8 cities (Delhi NCR, Bengaluru, Mumbai, Hyderabad, Chennai, Pune, Kolkata and Ahmedabad), all of which are urban metropolises with a high-income urban consumer-base, with their CEO noting that further expansion in both Zomato and Blinkit would be concentrated in these same cities.[179] Zomato's food delivery service has also had fairly stagnant average monthly transacting users (broadly oscillating between 17-19 million users), while also having exited from almost all of its foreign subsidiaries.[180,181]

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Moreover, Zomato's profits rely on a non-operating financial income, without which it would not be profitable: the other-income-to-PBT ratio was 177% in Q3FY24 and 147% in Q4FY24. A key component of this additional income was interest received from loans and investing activities[182]. Furthermore, Blinkit's strategy has involved reducing rider payouts brutally from Rs 50 per package to Rs 15, as a result of which the company has faced protests.[183] While the massive latent reserve army of labour that fills the rural countryside has disciplined the gig workforce into accepting such pitiable wages, regulatory intervention by the government (such as the government of Rajasthan's Rajasthan Platform Based Gig Workers (Registration and Welfare) Act, 2023) may force rider compensation to rise.[184] Other regulatory headwinds include a lack of clarity over their GST status: Zomato has received a Rs 23 crore tax notice from the Karnataka government over availing excess input credit under the GST rules as well as a Rs 401 crore show-cause notice from the GST authorities over unpaid GST on delivery charges; for now, Zomato maintains that it should not be liable to pay GST on delivery charges as they simply collect the delivery charges on behalf of their riders.[185,186]

Logistics, AI, and the 4th Industrial Revolution

Since the decline in the global rate of profit post 1998, global finance capital has scoured the planet looking for sources of a high return on capital. As Marx had highlighted, one way of increasing the surplus value generated is by increasing the turnover time: by speeding up the turnover process, the same capital is able to generate an increased amount of surplus corresponding to the rate of speeding up, a phenomenon that helps us understand 21st century capitalism's obsession with logistics.[187] In the internet era, firms use logistical and consumer data to push their stock towards higher demand areas and tailor their inventory to meet hyperlocal needs, and exponentially increase the pool of buyers. While retail in itself does not constitute a productive activity since it does not create any value on its own and only helps to realise it, tech platforms are productive since the last mile deliveries they provide add value to the products. In this context, the rise of quick commerce and ten minute deliveries can be seen as a way to further reduce turnover time. Thus urban logistics come to play a key role: a study from Spain showed that for a food delivery business to be profitable in Barcelona it would have to serve at least 8,000 orders a day, and more likely closer to 19,00 orders a day, to break even.[188] And this for a well planned city like Barcelona, whose quality of urban transit stands in stark contrast to even Indian metropolises. Finally, as transportation and transit analyst Hubert Horan puts it in his aptly titled paper *'Will The Growth of Uber Increase Economic Welfare?': "Uber's ruthless, hyper-competitive behavior is an integral part of its business model... Uber's investors cannot earn returns on the $13 billion they have invested without achieving levels of market dominance that would allow them to exploit anti-competitive market power... Capital has shifted from more productive to less productive uses."*[189]

Such a situation begs the question as to whether digitalisation actually constitutes a large-scale leap in productivity i.e. are we on the verge of the 4th Industrial Revolution? If the digital economy does generate large amounts of surplus value, then any issues of fragility or

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stability will be temporary. Unfortunately, at the very least the former is not likely to be true, at least not immediately. The digital revolution has not yet provided any significant long-term leaps in economic productivity, while the enormous growth in computing power has had only a moderate effect on growth.[190,191] Most of the technologies of the digital revolution have been argued to simply be extensions of existing technology: "*none is a radical, ground-breaking invention of the new millennium*".[192] Indeed, the digital era has been termed a weak Kondratiev wave, since digitalisation has primarily helped to 'reconfigure' already existing productive technological systems rather than produce a new one.[193] Thus if the tech economy is to usher in the 4th Industrial revolution and become a key growth engine, then new technologies must come to the fore. The most promising candidates are AGI and industrial AI. The former, though, suffers from a broad lack of specific, well defined, and implementable use cases, while the development of the latter has to a large extent been confined mostly to China.[194]

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Sectoral Overview

Indian Banks and the Net-Zero Challenge

Amitanshu Verma

Indian Banks and the Net-Zero Challenge

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In the face of India's ambitious goal of achieving net-zero emissions by 2070, the role of its financial sector is increasingly under scrutiny. As the world's third-largest greenhouse gas emitter, India's carbon-intensive industries — including coal mining, fossil fuel-based energy, and heavy transportation — are significant contributors to its emissions. Indian banks, in particular, are heavily exposed to these carbon-intensive sectors; according to Moody's, 25%-35% of Indian bank loans are directly tied to high-emission industries, with loans to carbon-heavy sectors amounting to nearly ₹1.20 trillion ($14.42 billion) by mid-2023. This situation presents a challenge for Indian financial institutions: They must balance their current financial dependencies on traditional, high-emission sectors with the need to transition toward greener investments and set decarbonization goals.

However, according to the Reserve Bank of India's recent "Climate Risk and Sustainable Finance" survey, the sector is ill-prepared for this transition. Few banks have implemented environment, social, and governance (ESG) performance indicators or established dedicated ESG departments to manage climate-related risks. Similarly, findings from the think tank Climate Risk Horizons highlight the gap in Indian banks' strategic planning, with most financial institutions lacking comprehensive strategies to account for climate risk in their operations.

This paper aims to map the regulatory and operational landscape surrounding decarbonization in India's banking and financial sectors, covering RBI's recent recommendations for the banking sector to support India's net-zero pathway. Through an analysis of recent surveys, reports, and policies, this study will outline the evolving roles, responsibilities, gaps and readiness of financial regulatory space to integrate sustainable finance and address climate risk in their lending practices. The final section of the chapter will raise questions on the approach of RBI recommendations.

The Gaps in India's Regulatory Framework

The Reserve Bank of India's (RBI) recent survey on "Climate Risk and Sustainable Finance" highlights critical gaps in Indian banks' preparedness to address climate risk and implement sustainable finance practices. One major finding is the inadequate engagement of board-level management in overseeing climate risk. In about a third of surveyed banks, no formal responsibility had yet been assigned for initiatives related to climate risk and sustainability, indicating a lack of strategic focus on these critical issues at the highest level of governance.

Furthermore, most banks have yet to adopt internationally accepted frameworks for climate-related financial disclosures, which are seen as essential for transparent, standardized reporting of environmental impacts. Without alignment to such frameworks, suitably modified for the Indian banking sector, banks' disclosures will remain inconsistent and lack the rigor needed to meet global standards, limiting their effectiveness in communicating climate-related financial risks to stakeholders.

Additionally, the survey found that the majority of banks have not established a dedicated business unit or vertical to manage sustainability and ESG (environmental, social, and governance) initiatives. This lack of specialized structures hinders the development and execution of comprehensive sustainability strategies.

While these findings indicate that Indian banks have begun making strides in addressing climate risk and sustainable finance, the overall progress remains limited. The sector still requires a concerted effort to strengthen governance, align with international reporting frameworks, and establish dedicated units for sustainability initiatives to effectively support India's broader climate goals.

What the regulator recommends

India's financial regulators are increasingly recognizing the urgent need to guide the banking and financial sector towards decarbonization. To align the sector with India's national commitment to net-zero emissions by 2070, the Reserve Bank of India has proposed a range of pathways aimed at making financial institutions more climate- conscious and better equipped to support sustainable economic activities. Below, we outline the primary measures suggested so far, as documented in the Reserve Bank of India's (RBI) 'Report on Currency and Finance 2022-23: Towards a Greener, Cleaner India.

Mandatory Disclosure Requirements Pertaining to Climate-Related Risks
One of the key recommendations is the implementation of mandatory climate-related disclosures for banks. These disclosures would involve reporting on exposure to climate risks within financial portfolios, shedding light on the degree to which banks' loans, investments, and other assets are vulnerable to climate change impacts. By increasing transparency, these disclosures are expected to help stakeholders—such as investors, policymakers, and customers—better understand the climate risks embedded in the sector. Such transparency is intended to push institutions towards climate-aware investment strategies, incentivizing a gradual shift towards low- emission, sustainable activities.

Integrating Environmental Risk in Risk Management Processes
Regulators are advising financial institutions to include environmental risk factors as a core component of their risk management frameworks. This entails incorporating risks related to environmental degradation, climate change, and emissions into existing risk assessment models. By doing so, banks can be encouraged to shift their risk mitigation practices to address climate-related risks more holistically, avoiding lending to sectors with high environmental impact or factoring in long-term environmental risks in loan pricing. Such an approach would not only protect the financial sector from climate-related shocks but also discourage investments in carbon-intensive industries.

Green Asset Ratio (GAR)

A Green Asset Ratio (GAR) is being proposed as a benchmark for tracking the share of a bank's total assets allocated to sustainable projects and activities. By setting a minimum threshold for the GAR, regulators can incentivize financial institutions to direct a specified proportion of their investments into green or sustainable initiatives. This metric not only promotes sustainable finance but also gives investors and the public insight into the "greenness" of a bank's portfolio, providing a standard by which the bank's progress on decarbonization can be measured.

Green Deposits

The concept of green deposits is emerging as an innovative way for banks to finance climate-positive projects. Green deposits allow customers to designate their deposits specifically for funding environmentally friendly projects, with banks committing to use these funds exclusively for sustainable investments. This approach creates an additional capital pool dedicated to green initiatives and offers depositors a direct way to contribute to environmental goals. Green deposits also enhance the public perception of banks as proactive agents in the fight against climate change, potentially attracting eco-conscious customers and investors.

Exclusion Lists

Another approach suggested is the adoption of exclusion lists, where financial institutions would refrain from funding certain high-emission industries or projects that significantly harm the environment. Exclusion lists have been a tool used internationally, particularly by banks that follow the Equator Principles or other sustainable finance frameworks, to avoid financing activities like coal mining, oil extraction, or deforestation-related businesses. By formalizing exclusion lists, regulators can help banks reduce their climate impact and reorient lending away from carbon-intensive sectors.

Governance Structures

Strengthening governance structures within financial institutions is also viewed as critical to supporting decarbonization efforts. Regulators recommend that banks establish dedicated committees at the board or directorial level focused on overseeing climate and ESG (environmental, social, and governance) initiatives. Such committees would be responsible for shaping sustainable finance policies, setting climate-related objectives, and ensuring accountability within the institution. By embedding climate governance at the highest levels, banks would be more likely to adopt long-term, strategic climate goals, creating a more significant shift in organizational culture and priorities.

Enhanced Disclosure Standards

In addition to mandatory disclosures related to climate risks, broader and more detailed disclosure standards are being encouraged. This would involve financial institutions reporting on the extent of their ESG-related efforts, targets for emission reductions, and the environmental impact of their lending practices. Enhanced disclosures would align Indian banks with international standards, improve transparency, and increase accountability regarding environmental impacts.

The Regulator's Role in Decarbonization

The regulatory role of Reserve Bank of India in decarbonization has so far been primarily advisory rather than strictly regulatory. Financial regulators are working to foster an enabling environment for green finance by building frameworks for climate accountability and creating supportive policies for sustainable investment. This approach has focused on laying the groundwork for green finance rather than imposing strict, mandatory requirements on the financial sector. Indian regulators are gradually attempting to align the country's financial ecosystem with international climate standards, driven by developments like the Task Force on Climate-related Financial Disclosures (TCFD) and the International Sustainability Standards Board (ISSB) guidelines.

By implementing these suggested measures, RBI aims to build a regulatory ecosystem that will drive financial institutions towards decarbonization. Through a mix of disclosure requirements, risk management enhancements, governance reforms, and green finance incentives, regulators hope to make the financial sector a powerful ally in India's transition to a sustainable, low-carbon economy.

The NET ZERO Framework

The RBI's report on 'Currency and Finance 2022-23 Towards a Greener India' notes that 'the financial system may have to mobilise adequate resources and also reallocate current resources to contribute effectively to the country's net-zero target.' Towards this end the report discusses the task cut out before India's financial institutions who, on the one hand, must contribute to the net-zero goal and on the other, strive to preserve financial stability. India has set for itself an ambitious net-zero target committed to balancing out its carbon emissions by 2070. Critics point out that the success in achieving this goal depends upon India finding solutions for absorbing carbon emissions at a large scale, which at present are seen as unviable owing to extremely high costs and technological hurdles. This is because net zero pathways do not strictly involve bringing carbon emissions to zero. At most the highlights of such pathways involve increasing the proportion (even though the quantum of fossil fuel based emission may continue unabated) of renewables based energy in India's total energy mix, increasing energy efficiency, and building nature based carbon absorption technology such as making plantations. Nature based carbon capture solutions have been shown to be effective only over very long durations and not enough to the extent needed for absorbing current emissions. India lacks a well defined plan towards net zero nor does not commit towards phasing out fossil fuel based energy.

What does this mean for financial institutions? It practically translates into stepping up financing for 'Green' projects, even while not reducing their financing for fossil fuel based carbon intensive sectors. Indeed, in recent times the government itself has encouraged banks and financial institutions to invest in the coal sector. Recent sectoral credit data shows that financing for fossil fuel based industries has actually increased.[185] Unless a coordinated national strategy for decarbonization is charted out, financial institutions will continue to invest in carbon intensive sectors heavily, in the absence of internal safeguards and exclusion lists.

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Regulatory Gaps

The proposals considered by RBI towards decarbonisation suffer from many glaring gaps too, which have featured in commentaries. First, the absence of a green taxonomy is an urgent but difficult challenge that faces regulators. Plus the lack of a coordinated sector wise targeted net-zero strategy exacerbates the problem. Second, the need for a robust monitoring and inspection mechanism is as yet unaddressed in proposals being discussed by the RBI. To some extent the framework for 'Green deposits' recommended by the RBI is a step in this direction but does not cover all of banks' investments. A key requirement under the framework is the mandatory preparation of an annual third-party verification/assurance report. This report will verify whether the activities financed by green deposits align with established green criteria. It will also examine if the bank or NBFC has proper policies and internal controls in place for evaluating projects, managing funds, and validating the sustainability claims made by borrowers. Additionally, financial institutions must create an annual impact assessment report detailing the outcomes of green financing activities or projects. These reports must be publicly accessible on the institution's website. Furthermore, it introduces an exclusion list prohibiting funding for projects such as fossil fuel extraction, nuclear power generation, weapon manufacturing, palm oil production, and large hydropower projects exceeding 25 megawatts.

As things stand, the deliberations at RBI are still a long way off from recommending participatory structures for scrutiny, involving affected communities, civil society and independent researchers and environmentalists who can potentially make the monitoring and assessment operations considerably meaningful.

Beyond Decarbonisation

Globally, however, sustainable finance extends beyond merely tracking and lowering carbon and GHG emissions. The Principles of Responsible Banking, introduced in 2019 by the United Nations Environment Programme Finance Initiative, illustrate this broader approach. These principles, endorsed by banks worldwide, including India's YES Bank, urge financial institutions to evaluate the social, environmental, and climatic impacts of their investments. They also advocate for channeling investments toward achieving the Sustainable Development Goals (SDGs), which aim to tackle pressing social, economic, and environmental challenges by 2030.

This shift represents a significant change in perspective. It moves from simply mitigating climate risks that might threaten investments to actively reducing the broader negative socio-economic, environmental, and climatic consequences of financial activities. However, such frameworks must not remain superficial commitments used for public relations purposes. Instead, the central regulator's project finance policies need to integrate actionable components of these principles to ensure meaningful implementation in major lending decisions.

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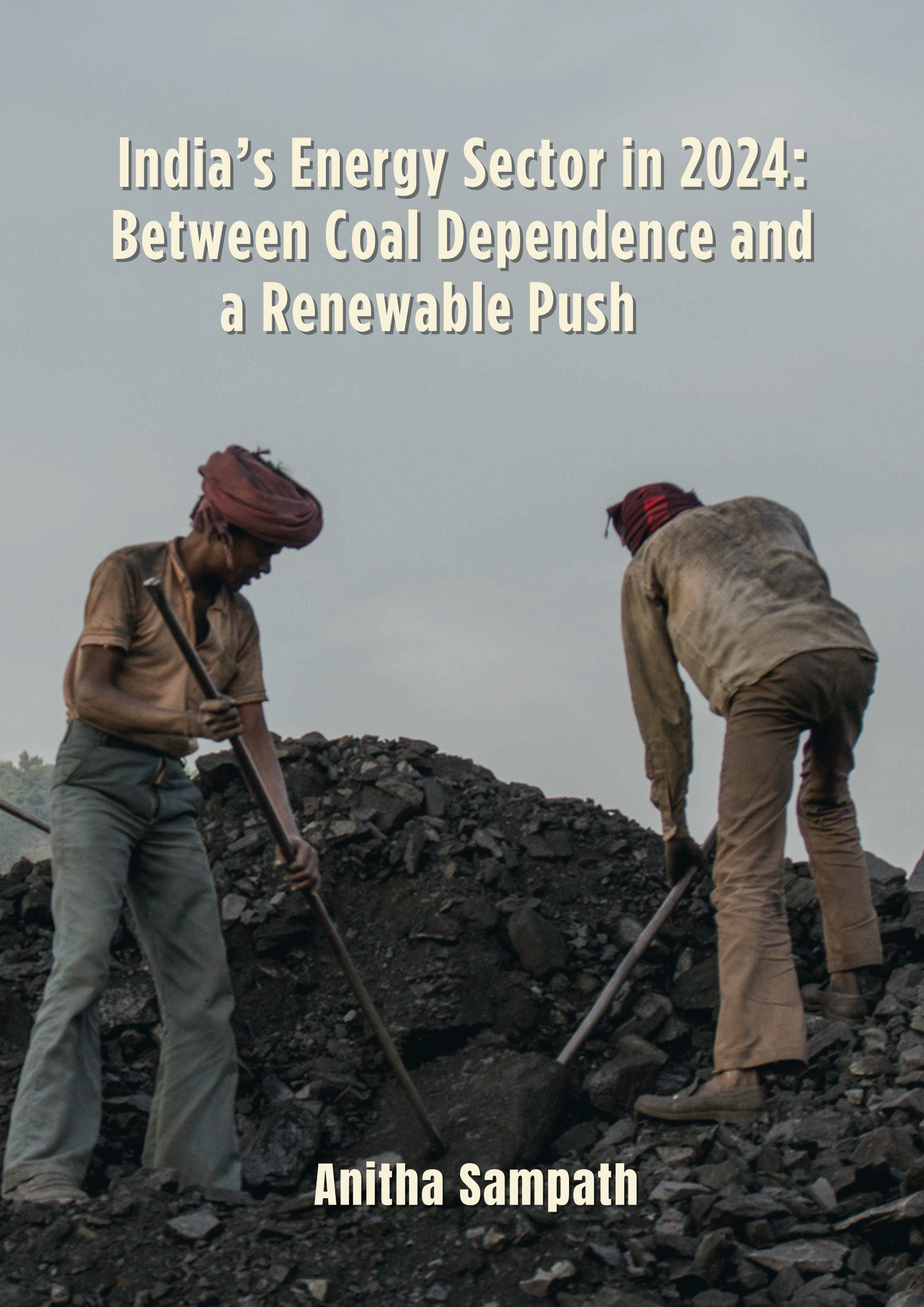
India’s Energy Sector in 2024: Between Coal Dependence and a Renewable Push



Anitha Sampath

India's Energy Sector in 2024: Between Coal Dependence and a Renewable Push

Anitha Sampath

Introduction

India's energy sector in 2024 presented a dynamic landscape characterised by a surge in energy demand, continued reliance on traditional fossil fuels, and an accelerated push towards renewable energy sources. This intricate balance was significantly influenced by the country's economic growth, urbanisation, and increasing focus on environmental sustainability. The financial dimensions of this energy transition were pivotal, involving substantial investments, policies supportive of large scale renewable and fossil fuel industry over the needs of people and consumers of energy. The year 2024 was also marked with the navigation of economic and geopolitical uncertainties in the energy sector, which had implications on India's energy outlook.

India had GDP growth of 6.6% in 2024, driven by robust economic activities, infrastructure development, and foreign direct investment (FDI). This has led to a surge in energy demand across various sectors.[196] India is experiencing rapid growth in energy demand driven by its large population and expanding economy, as well as increased demand for cooling. India is the third-largest energy consumer in the world.[197] According to the Statistical Review of World Energy 2024, coal continues to dominate India's primary energy mix, accounting for over 56.3%, followed by oil at 27.1%, and natural gas at 5.7%.[198] The electricity sector remains the biggest consumer of raw coal and lignite. Consumption of natural gas has grown, particularly in small-to-medium scale industries, which are now the second-largest consumers behind the fertiliser sector. The transport sector also experienced high demand growth, driven by increased vehicle usage and a gradual shift towards electric vehicles.[199] Electricity consumption has also shown a sharp growth, with the power sector being a major consumer of coal and lignite. Per capita energy consumption in India is also increasing, though it remains below the global average. There was an increase of investments in renewable energy, with India installing 203 GW (including large hydro) of renewable energy capacity as of October 2024.[200]

This sectoral review will provide a critical overview of the trends, key developments, implications, and challenges in India's energy and finance sectors in 2024, with a focus on coal, and renewable energy.

[196] Rao, A. (2024, December). India's economic report card for 2024: FDI, trade, and infrastructure growth. India Briefing. https://www.india-briefing.com/news/india-economy-2024-gdp-growth-rate-fdi-trade-performance-35614.html/
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[198] Calabrese, J. (2025, March). How India is powering progress against fossil fuel reliance and rising demand. illuminem. https://illuminem.com/illuminemvoices/how-india-is-powering-progress-against-fossil-fuel-reliance-and-rising-demand
[199] Ministry of Power, Government of India. (2024). India energy scenario for the year 2023-24. Bureau of Energy Efficiency. https://beeindia.gov.in/sites/default/files/BEE_India_Energy_Scenario_Report-2024_web_version-rev2.pdf
[200] Ministry of Power, Government of India. (2024). India energy scenario for the year 2023-24. Bureau of Energy Efficiency. https://beeindia.gov.in/sites/default/files/BEE_India_Energy_Scenario_Report-2024_web_version-rev2.pdf

Continued dominance of coal

In 2016, India ratified the Paris Agreement on Climate Change, which requires countries to reduce greenhouse gas emissions and adapt to the effects of climate change. As part of the Paris Agreement, India committed to generate at least 40% of its electricity from non-fossil sources by 2030. However, the last 10 years has seen an expansion of coal-mining and coal-fired power generation. The Government of India (GoI) has further announced 93 GW of coal generation capacity, which is expected to be built by 2032. In the last 10 years, there has been a 64% increase in coal production, from 609 million tonnes in 2014-15 to 997 million tonnes in 2023-24.[201]

Despite India's ambitious renewable energy targets, coal remained a dominant source of power in 2024 as well. In the first half of 2024, India's coal production and imports reached a record high to meet the rise in seasonal electricity demand, exacerbated by extreme heatwaves. Coal accounted for approximately 45% of India's total primary energy supply in 2022, increasing from 43% in 2020.[202] For the fiscal year 2022-23, energy generated from coal accounted for about 77.01% of the total energy generation in India. Domestic coal production was dominated by the public sector, accounting for almost 96% of the total in FY 2022-23. The total estimated reserves of coal in India as of April 1, 2022, were 361.41 billion tonnes, showing a growth of 2.64% over the previous year.[203]

Subsidies for coal also saw an increase of 17% between FY 2022 and FY 2023. Notably, total subsidies for coal and other fossil fuels were eight times higher than those allocated to renewables.[204] The government continued to provide subsidies and tax incentives for domestic and imported coal.[205]

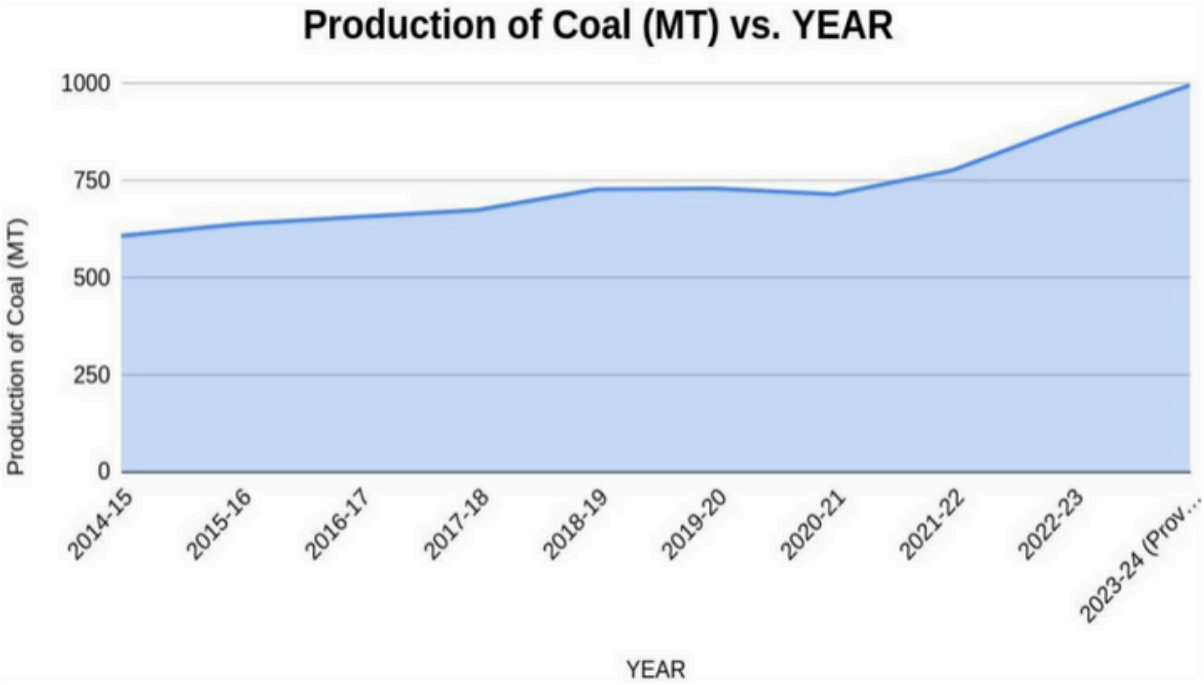
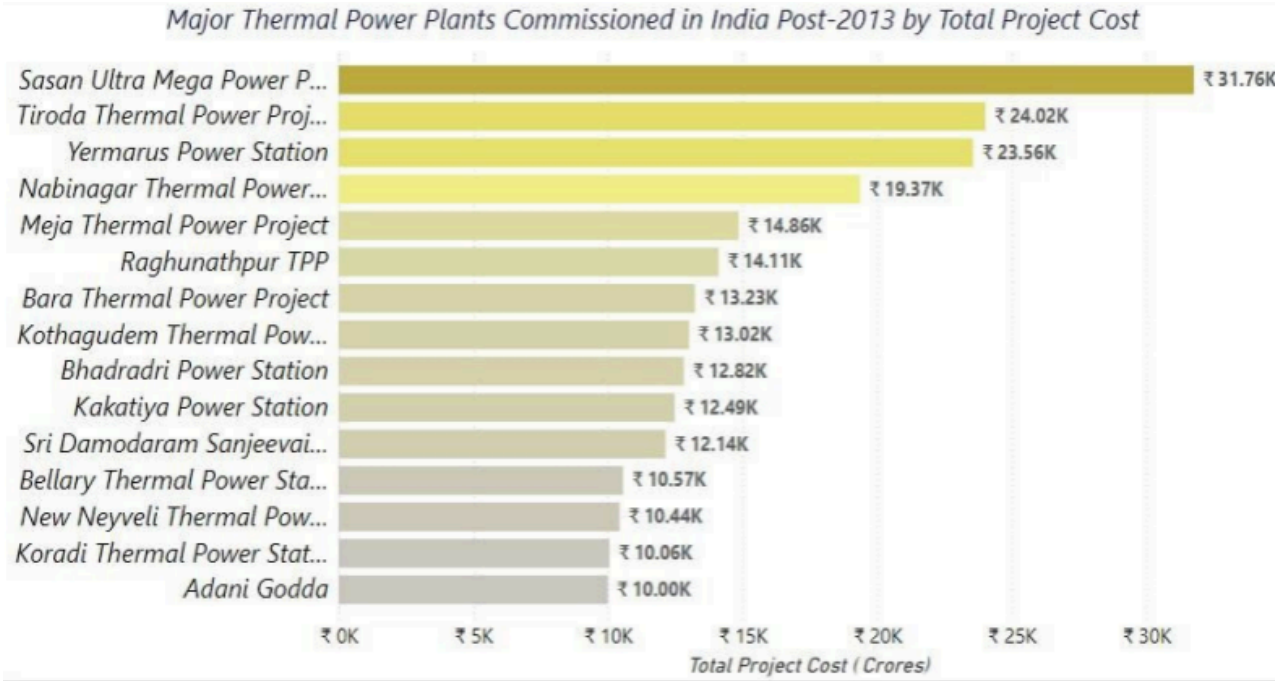


Figure 1: 10 year domestic coal production in India (Source: Ministry of Coal)

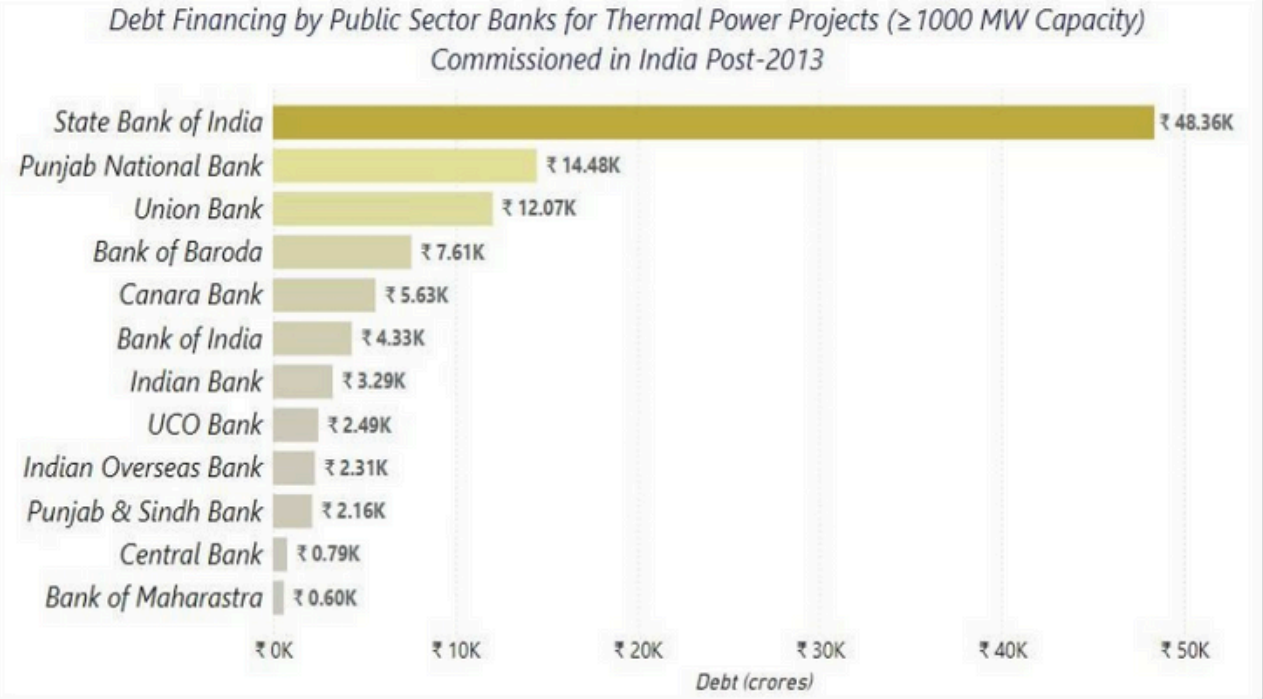
[201] Ministry of Coal, Government of India. (2021). Company wise production and dispatch of raw coal during last ten years (2014-15 to 2023-24). https://coal.gov.in/sites/default/files/2021-01/productiondata_tenyear.pdf
[202] Raizada, S., Sharma, D., Laan, T., & Jain, S. (2024, March). India faces clean energy challenges as energy demand soars and global fossil fuel subsidies rise. International Institute for Sustainable Development (IISD). https://www.iisd.org/articles/press-release/india-clean-energy-challenges-energy-demand-fossil-fuel-subsidies
[203] National Statistical Office. (2024, March). Energy statistics India 2024. Ministry of Statistics and Programme Implementation, Government of India. https://www.mospi.gov.in/sites/default/files/publication_reports/EnergyStatistics_India_publication_2024N.pdf
[204] Raizada, S., Sharma, D., Laan, T., & Jain, S. (2024, March). India faces clean energy challenges as energy demand soars and global fossil fuel subsidies rise. International Institute for Sustainable Development (IISD). https://www.iisd.org/articles/press-release/india-clean-energy-challenges-energy-demand-fossil-fuel-subsidies
[205] Climate Action Tracker. India: Country-wise summary. https://climateactiontracker.org/countries/india/

In 2016, Indian commercial banks channelled $6.8 billion to the coal industry. In 2023, their coal financing amounted to $1.8 billion, 74% less than the 2016 baseline. However, in December 2023, India's power minister announced plans to add nearly 88 GW of new thermal power capacity to the grid by 2032. Much of this new capacity would be coal-fired, and it is entirely possible that Indian banks could step up their coal financing again. Up to now, only two small Indian private banks - Suryoday Small Finance and Federal Bank - have adopted policies excluding the financing of new coal projects.[206] The country's largest coal financiers over the past 3 years were the State Bank of India $2.1 billion, ICICI Bank $1.5 billion, Trust Group $1.1 billion, AK Group $871 million and Axis Bank $782 million. 65% of corporate finance for coal-linked companies originated from U.S.-based banks, with Jefferies Financial Group alone providing INR 25,945 crore (USD 3.14 billion) to firms like Adani and JSW Energy.[207]

The sustained dependence on coal presents a significant challenge to India's clean energy transition and its commitment to the Paris Agreement. The continued expansion of coal-fired power is not aligned with the 1.5°C target. While renewable energy capacity increased, it barely kept pace with the surging electricity demand, resulting in coal's electricity generation share remaining high.[208]



[206] Still Banking On Coal. (2024, May). Still banking on coal: Commercial banks still deep into coal 8 years after Paris. Urgewald. https://stillbankingoncoal.org/view-report
[207] Energy Team. (2024, December). Coal vs RE Investment Report 2024. Centre for Financial Accountability. https://www.cenfa.org/coal-vs-re-investmentreport-2024/
[208] Climate Action Tracker. India: Country-wise summary. https://climateactiontracker.org/countries/india/



The Economic Survey emphasises the crucial role of coal in India's energy strategy. It advocates against the premature shutdown of coal plants without viable alternatives, emphasising that doing so would leave significant investments stranded and underutilised, especially given the lack of dependable alternatives in place.

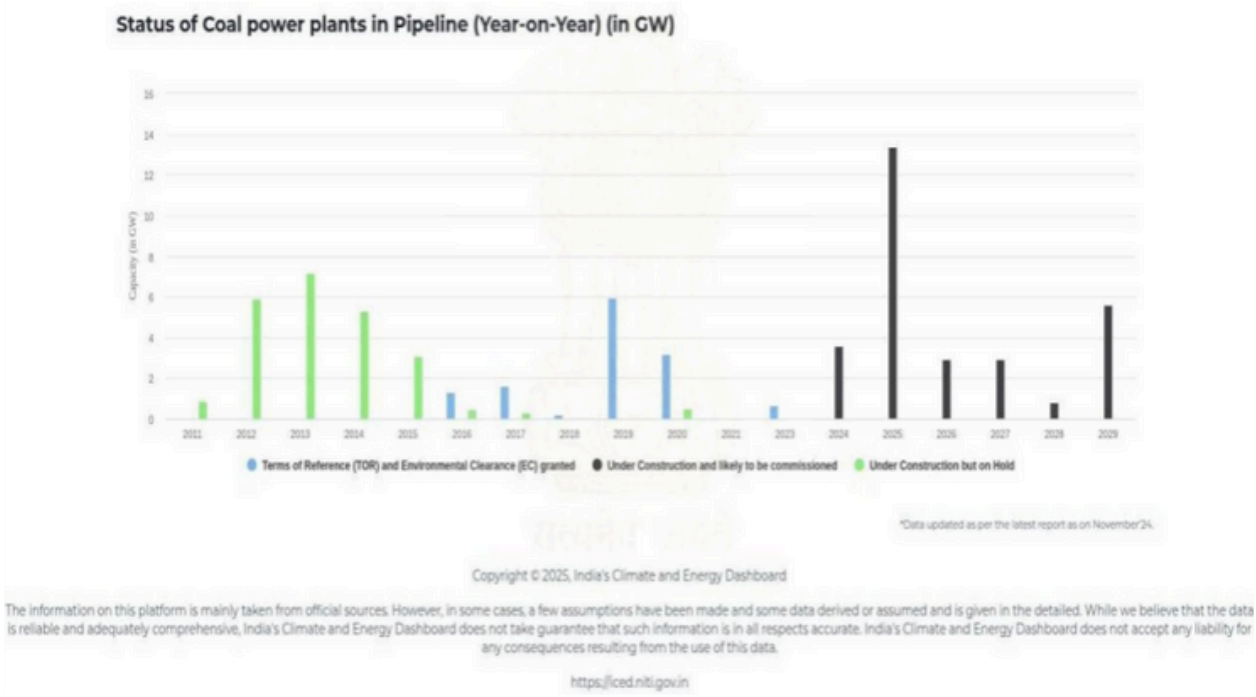
India has a substantial reliance on coal, possessing about 10% of the world's coal reserves, and has made significant investments in coal infrastructure primarily during the 2010s. The government plans to add another 90 GW of thermal power capacity by 2030, with 46 new coal-fired power plants currently in the pipeline, totalling over 52 GW.[209] While it can be argued that India should continue to utilise its existing assets to the fullest extent, there is no viable argument for why the Government is creating further new assets in coal.

Pipeline Plants

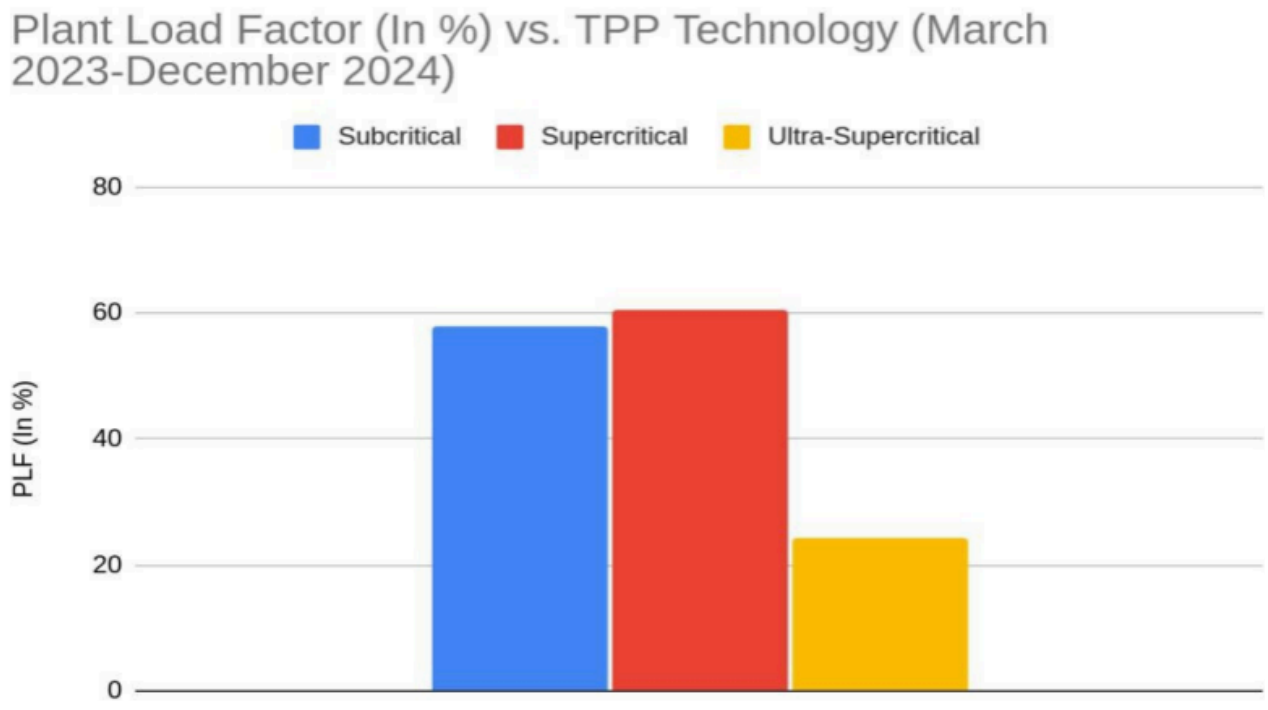
Status	No. of Units	Pipeline Capacity (MW)
Under Construction but on hold	53	23,555
Under Construction and likely to be commissioned	40	29,200
Total	**93**	**52,755**

*Data updated as per the latest report as on November'24.

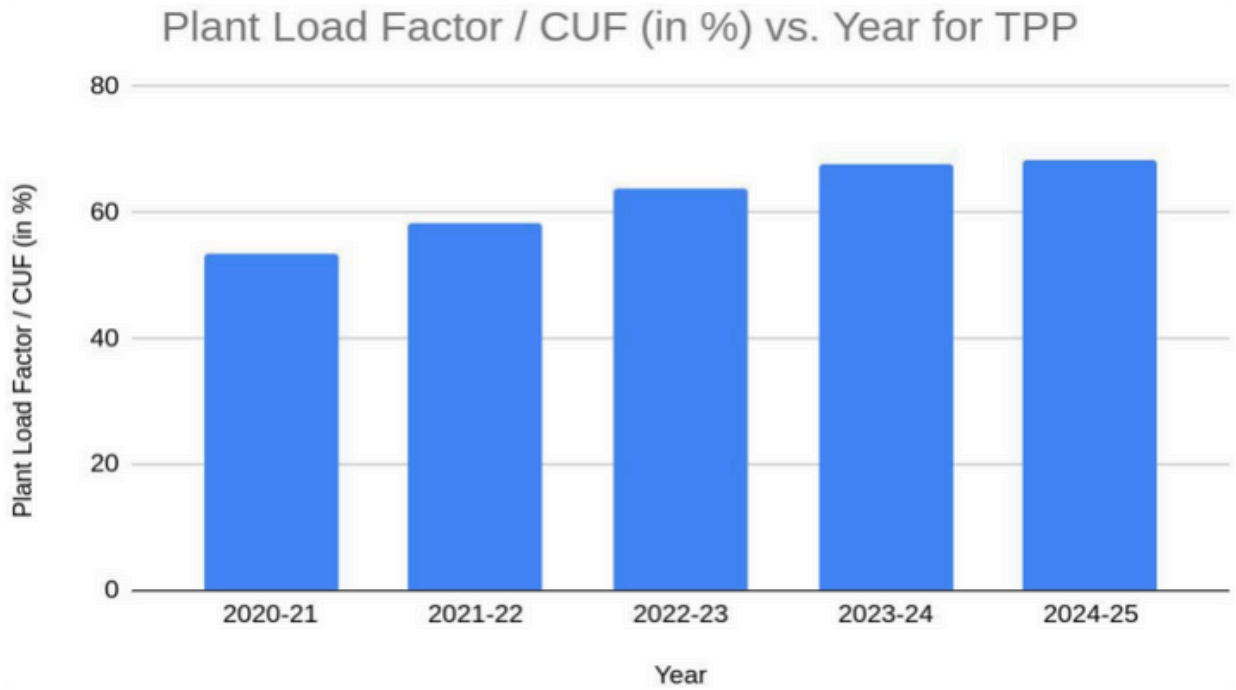
[209] ICED. (2025, June). India climate and energy dashboard. India Energy, NITI Aayog, Vasudha Foundation. https://iced.niti.gov.in/energy/electricity/generation/pipeline-capacity/coal



While promoting advanced technologies like super-critical (SC), ultra-super-critical (USC), and Advanced Ultra Super Critical (AUSC) systems to improve efficiency, data shows that a good deal of existing coal power plants operate below optimal capacity. This raises questions about the necessity of commissioning new thermal power plants when existing ones are underutilised. Our analysis indicates that plant load factors (PLF) for many SC and USC plants have been low, which suggests inefficiencies in current operations, as shown in the chart below.



Additionally, we have looked at PLF of all coal-fired thermal power plants (TPP) over the last five years in the chart below. This shows that on average, all TPPs are running below maximum capacity. In the context of thermal power plants running at much lower than maximum capacity, is there a need for newer thermal power plants to be commissioned? Would it not be more prudent to ensure increased utilisation of existing assets?



Given that many existing TPPs are not operating at full capacity, it may be more prudent to focus on increasing the utilisation of these assets rather than commissioning new plants. This could involve retrofitting current facilities for flexible operation to better meet peak demand and integrate renewable energy source effectively. As the country aims for net-zero emissions by 2070 (as per Nationally Determined Targets), investing in new coal plants do not align with long-term energy goals.

In addition to financing coal based thermal power generation, India has approved schemes for other uses of coal beyond electricity. A ₹8,500 crore scheme was approved to promote coal gasification projects, with Bharat Coal Gasification, CIL- GAIL, and Jindal Steel among beneficiaries. This aligns with India's 2030 target of 100 million tonnes (MT) of coal gasification.[210]

India's coal sector financing in 2024 revealed a complex interplay of corporate funding, government incentives, and strategic policy shifts to continue coal dominance. This continued finance from national banks and corporate finance for coal will lead to locking in long-term fossil fuel dependency, conflicting with India's net- zero 2070 pledge. This strategy leads to conflict between immediate energy needs of the country and the urgent need for decarbonisation.

Renewable energy - Rapid expansion, but at what cost?

India has set ambitious targets for Renewable Energy (RE). The Government of India set an ambitious target in 2015 of installing 175 GW of renewable energy capacity by 2022. As part of the Paris Agreement, India has set a target to install 500 GW of RE capacity by 2030

[210] Ministry of Coal. (2025, February). India's coal boom: Policies, production, and investments. Research Unit of Press Information Bureau, Government of India. https://static.pib.gov.in/WriteReadData/specificdocs/documents/2025/feb/doc2025210497701.pdf

The installed renewable capacity (including large hydro) reached 190 GW as of June 2024 and Indian Government claims it is on track to achieve the 500GW target.[111]

Renewable Energy has been getting increased allocations in the budget in line with India's Nationally Determined Commitments (NDC). However, India is well short of the goal of 500 GW of installed RE capacity. As of date, India has installed nearly 130 GW of solar and wind generation. The 2024-25 Interim Budget allocated $1.2 billion to solar power grid projects, a significant 110% increase from the previous fiscal year. Viability gap funding will be provided for offshore wind energy for an initial capacity of 1 GW. Investments in renewable energy projects in India are projected to increase by over 83% to around USD 16.5 billion in 2024.

Large Scale RE (Solar PV and Wind)

As per Centre for Financial Accountability's data portal, nearly US$ 4.6 billion has been invested in ground mounted solar in India so far with finance from 41 different lenders, both public and private. Out of that, L&T finance, SBI (State Bank of India) and HDFC Bank are the top Indian lenders. Among International lenders, IFC (International Finance Corporation), Mizuho Corporate Bank, and Bank of Tokyo are the top three lenders.

To support off-shore wind, SECI (Solar Energy Corporation of India) is planning to invite bids for up to 4GW to set up offshore wind plants off the coast of Tamil Nadu and Gujarat. The GoI has decided to invite bids for 50 GW of RE annually, which includes up to 10 GW of wind capacity.

Rooftop and small scale solar PV

The Indian rooftop solar market is divided into residential, commercial and industrial (C&I), and government segments. The uptake of rooftop solar in the residential sector has been largely underwhelming. As of March 2024, residential rooftop solar installed capacity in India was about 3.2 gigawatts (GW), or 27% of the total rooftop solar installations in the country.[112] In February 2024, the Government of India revamped the subsidy structure for residential rooftop solar through the Pradhan Mantri Surya Ghar Yojana (PMSGY). This initiative aims to enhance the residential rooftop solar market by targeting cumulative installations of 30 GW in 10 million households by March 2027.[113] To enhance its effectiveness, the PM Surya Ghar Yojana increased the central financial assistance (CFA) for systems below 3-kilowatt peak (kWp) capacity.

It established strict process timelines, and integrated with the National Portal for Rooftop Solar (NPRS) to offer a digitised user experience for residential consumers. As of August 2024, the scheme has attracted approximately 1.3 crore (13 million) registrations and 18 lakh (1.8 million) applications, resulting in a total of 3.85 lakh (385,000) installations. This achievement represents about 1.8 GW of new residential rooftop solar capacity, which is more than half of India's total, accomplished in just six months.

[111] PTI. (2025, March). India on track to achieve 500 GW renewable energy target: Pralhad Joshi. The Economic Times. https://economictimes.indiatimes.com/industry/renewables/india-on-track-to-achieve-500-gw-renewable-energy-target-pralhad-joshi/articleshow/119599398.cms?from=mdr

[112] Sharma, P., Gulia, J., Garg, V., & Upadhyay, G. (2024, October 16). Unleashing the residential rooftop solar potential. Institute for Energy Economics and Financial Analysis. https://ieefa.org/resources/unleashing-residential-rooftop-solar-potential

[113] Mordor Intelligence. India solar rooftop market size & share analysis - Growth trends & forecasts (2025-2030). https://www.mordorintelligence.com/industry-reports/india-rooftop-solar-market

With the exponential growth of large scale grid connect solar, the country is missing the plot on decentralised solar. While there has been a significant investment in PM Surya Ghar scheme which is a welcome step in decentralised access to rooftop based solar, the scheme is only accessible to households with access to enough roof space. A significant portion of the population do not have access to enough roof space or suitable roofs capable of handling a solar installation. Additionally, Surya Ghar requires households to pay an upfront cost for setting up the rooftop PV which not all households are able to afford. It is in this context that the reduction in funding to off grid solar systems is perplexing. It seems the government is interested in centralising any plans of decentralised solar systems.

Off-grid solar systems have over the years emerged as a critical solution for energy access in remote areas and urban centres alike, combining photovoltaic technology with battery storage to create self-sufficient power solutions. These systems are particularly vital as 100% electrification doesn't always guarantee reliable supply, with rural areas experiencing 12-16 hours of daily power outages in some regions. The stopping of budget allocations for off grid solar in conjunction with reducing allocations for power system strengthening, as presented in the previous section. This points towards an increasing challenging time for integration of renewable energy in the distribution and transmission network.

Amount in ₹ Crore	Actual 2022-2023	Actuals 2023-2024	Revised Estimated 2024-25	Budget estimates 2025-26
Solar Power (Off Grid)	57.11	34.42	12	0.01
Solar Power (Grid)	4280.34	5009.17	1300	1500
Kisan Urja Suraksha evam Utthaan Mahabhiyan (KUSUM)	1325	1100	2525	2600
PM Surya Ghar Muft Bijli Yojana			11100	20000
Wind Power (Grid)	1413	916.3	800	500
Hydro Power (Grid)	17.96	13.45	45	50

Misplaced Focus on Nuclear Energy

Nuclear energy is touted as a viable low-carbon alternative, with the development of Bharat Small Reactors (BSRs) through public-private partnerships. In the latest budget speech, the finance minister promised various amendments to Indian legislation - the Atomic Energy Act and the Civil Liability for Nuclear Damage Act - to encourage private sector participation in nuclear projects. This includes partnering on the development of the Bharat Small Modular Reactor, a compact 200 MW pressurised heavy water reactor. This is a dangerous development in recent years.

As of 2024, India had a nuclear power capacity of approximately 8.18 GW. The government aims to increase this capacity to 22.48 GW by 2031-32 and further to 100 GW by 2047.[214]

The Economic Survey,[215] however, has highlighted several critical issues surrounding the growth of nuclear energy in India, including public safety concerns, waste management challenges, and the availability of raw materials and technology. Despite these challenges, the recent budget announcement indicates plans for over 100 GW of nuclear power projects to be financed entirely by the private sector. This ambitious initiative raises further concerns, particularly regarding a proposed amendment to the Civil Liability for Nuclear Damage Act, aimed at incentivising private investment in nuclear energy.

Conclusion - The Illusion of Just Energy Transition

The just transition discourse in India is evolving through research, stakeholder engagement, and institutionalisation, with the Ministry of Coal establishing a Just Transition Division. Financing the just transition is a key challenge, with estimates suggesting significant costs for decommissioning coal plants and compensating the workforce. Existing mechanisms like District Mineral Foundations (DMFs) and CSR funds are being considered for redirection towards just transition goals. Research on jobs and just transition highlights the large number of people dependent on the coal sector and the need for concrete roadmaps for alternative clean energy jobs,[216,217] considering the geographical mismatch between fossil fuel and renewable energy potential.[218] The transition will have significant consequences for regional economies heavily reliant on coal, necessitating localised approaches and economic diversification strategies. Many coal mining districts face high levels of poverty and poor living standards.[219]

In 2024, India's energy landscape was marked by a complex interplay between surging energy demand, continued reliance on fossil fuels, and an accelerated push towards renewable energy. Despite ambitious targets for renewable energy, coal remained a dominant source of power, posing significant challenges to India's clean energy transition and commitment to the Paris Agreement. The sustained investment in coal infrastructure and the planned expansion of coal-fired power capacity raise concerns about long-term fossil fuel dependency and alignment with net-zero emissions goals by 2070.

On the other hand, renewable energy saw substantial investments and growth, with notable sadvancements in solar and wind power. However, challenges persist, particularly in decentralised solar systems and off-grid solutions, which are crucial for reliable energy access in rural areas. The shift towards nuclear energy also presents both opportunities and challenges, including public safety and waste management concerns.

Ultimately, India's energy sector must navigate these complexities to achieve a just and sustainable energy transition. This requires strategic policy shifts, increased investment in renewable energy integration, and efficient utilisation of existing coal assets. Balancing immediate energy needs with long-term sustainability goals will be crucial for India's economic growth and environmental commitments. However, currently, there isn't any energy transition happening in India. There is only increase in capacity in both fossil fuel and in renewable energy.

214 Srivastava, D. P. (2025, February). Podcast: India's plans for large-scale nuclear energy expansion. World Nuclear News. https://www.world-nuclear-news.org/articles/podcast-indias-plans-for-rapid-nuclear-energy-expansion

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Failure of the Climate Finance Promise : More Climate distress, Less Finance

Soumya Dutta

Failure of the Climate Finance Promise : More Climate distress, Less Finance

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The Climate Change Crisis, a defining challenge of the 21st century : Over more than the last two decades, most parts of the Earth have been subjected to repeated and increasing climate related extreme events and disasters. The World Meteorological Organization (WMO) had to declare the decade of 2001-2010 as the "Decade of Climate Extremes". As our extraction and burning of fossil fuels have continued unabated, despite the Paris Agreement, the greenhouse gas GHG concentrations in the atmosphere also kept rising, fuelling further global heating and the multitude of climate change impacts across the globe.[220] The rate of climate change surged alarmingly in the last decade 2011-2020, which was the warmest decade on record. Continued rising concentrations of greenhouse gases fuelled record land and ocean temperatures and turbo-charged a dramatic acceleration in ice melt and sea level rise.

The Global Climate 2011-2020: A decade of acceleration,[221] World Meteorological Organization, (WMO). These have resulted in both 2023 and 2024 breaking average annual temperature records, with 2024 being the first year to break the 1.5 C above pre-industrial average, on instrumental records of past 175 years. From early 1970s to last decade, severe storms and flooding events have increased over 2.6 times and the no. of people impacted by these have increased from about 48 million every year in 1970s to well over 100 million (10 crores) each year, by 2015 (UNISDR). The current decade has started on a more ominous note, and every year brings grimmer news about how close we are getting to irreversible or 'runaway climate change', and the distance to those tipping points are getting shorter by the month, faster than predicted by the earlier IPCC reports. The IPCC Assessment Report 6 (AR6) gave us time till 2030 to cut global Carbon Dioxide emissions by over 45%, by completely changing our energy, industrial and consumption systems, but later studies show that this might be a liberal estimate. All these have made the world acknowledge, at least in principle, that "Climate change is the defining challenge of the 21st century". And yet, the global policy responses have been far from commensurate.

The concept of Climate Finance: The three most urgently needed areas of climate actions relate to Mitigation (removing the root cause of climate change, by drastically reducing GHG emissions), Adaptation (how people and systems can change themselves so as to minimise the multiple impacts of climate change), and Loss & Damage (because of inadequate mitigation and adaptation over the past decades, climate extreme events have increased sharply and are causing massive losses and damages - both economic and non-economic - to all countries, and the economically poorer societies have a lower capacity to respond and recover on their own , requiring external support). All three areas need infusion of massive amounts of financial resources, which the developing and poorer countries cannot muster on their own.

[220] Ritchie, H., & Rosado, P. (2017). Fossil fuels. Our World in Data. https://ourworldindata.org/fossil-fuels

[221] World Meteorological Organization. (2023). The global climate 2011-2020: A decade of accelerating climate change (WMO-No. 1338). WMO. https://wmo.int/publication-series/global-climate-2011-2020-decade-of-acceleration#:~:text=The%20rate%20of%20climate%20change,melt%20and%20sea%20level%20rise.

The concept of climate finance originated from these need for financing, mostly from the rich developed countries to the poorer developing countries. The idea was that developed (rich, Annexe 1) countries, who have contributed the most in creating the climate crisis by consuming massive amounts of fossil fuels and other resources in creating wealth for their own societies, will provide grants and very low cost finances to the developing and poor countries - who have little contribution in creating the crisis, yet are suffering the most. This was rooted in the CBDR-RC Principle : Common But Differentiated Responsibilities (Rich countries have more responsibilities) and Respective Capacities (again, the rich have more). This was accepted by all UNFCCC (United Nations Framework Convention on Climate Change) during the 1997 CoP-3 (Conference of Parties of the Convention) under the Kyoto Protocol KP. It was also accepted (self evident) that the poorer countries do not have the financial wherewithal to either cope with the massive losses or to invest enough in making their economies of lower carbon intensity (a necessity for averting climate catastrophe), while providing minimum "development gains" for their under- served populations.

What's required and What's being delivered, by Whom, Globally?

Climate Finance was one of the four essential pillars (along with Mitigation, Adaptation and Technology Transfer) under the 1997 Kyoto protocol (CoP-3, in Kyoto, Japan) and the later Bali Roadmap prepared at the UN Framework Convention on Climate Change (CoP-13, 2007, Bali, Indonesia). Several estimates have shown that the annual hits the poorer economies take, and the minimum money they need to move away from a fossil carbon based development pathway, is now (2024 estimates) in the trillions of US dollars every year. Even by the conservative estimates of the UNFCCCs Standing Committee on Finance, in their last report, developing countries need at least $5.036-6.876 trillion until 2030 to cover the costs of achieving their climate targets, which comes to between USD 455-584 billion per year. The 'committed' figure by the developed countries still stands at USD 100 billion per year, as determined in Cancun CoP-16. And even that meagre USD 100 billion target had not been fulfilled in any year, if one counts only the new and additional financing (leaving aside the renamed ODAs). In the lastCoP-29 at Baku, Azerbaijan, this 'commitment' has been increased to USD 300 billion per year, but starting only from the year 2030.[111]

To tackle the climate crisis, there are two mechanisms created under the UNFCCC - Finance Mechanism and Technology Mechanism. Initially the Global Environment Facility GEF was one of the main implementing body for the Finance Mechanism. In 2010, at the CoP-16 Cancun Climate Conference, the Parties (member governments) to the Convention (UNFCCC) created the Green Climate Fund GCF as the main implementing body, by its "decision 1/CP.16", while the GEF, the Adaptation Fund, several targeted funds continued to operate. In addition, many Development Finance Institutions, International Financial Institutions, Multilateral and Bilateral FIs also provide "climate finance" to both governments and private entities, as well as sub- national entities like municipalities etc. But the GCF has miserably failed to live up to the expectations, and its latest annual report shows *"The Green Climate Fund (GCF) disbursed approximately USD 4.8 to 5.1 billion by the end of 2024, representing 30- 32% of its estimated total approved funding. This includes disbursements from 2023, where almost USD 4 billion was deployed on the ground, and 84% of the portfolio was under implementation. In 2023, the GCF also funded USD 2.1 billion for 34 new approved projects, expanding its portfolio to USD 13.5 billion. (Annual Report 2023 - Green Climate Fund). In 2023, GCF funded USD 2.1 billion for 34 new approved projects.*

[111] United Nations Climate Change. (2024, April 29). From billions to trillions: Setting a new goal on climate finance. https://unfccc.int/news/from-billions-to-trillions-setting-a-new-goal-on-climate-finance

(Report of the Green Climate Fund to the Conference of the Parties). By end of 2024, GCF claims that "With additional pledges, the GCF replenishment for the 2024-2027 programming period has raised a record-breaking amount" ![123]

In the CoP-28 in Dubai, UAE in the year 2023, after over a decade of pursuing, a Loss and Damage Fund was set up, though with a small capital of less than USD one billion. The initial general understanding of Climate Finance was that these will mainly be public funds from developed /rich countries, will be mostly grants rather than loans and will flow preferentially to poorer developing countries, and will be additional to the Official Development Assistance ODA. The real landscape that emerged over the last 15 odd years is very different. The commitment from developed (Annex1) countries was to provide USD 100 billion / year, globally, starting 2020, and substantial amounts before that. For comparison, the US alone took a climate change driven economic hit of USD 91 billion in 2017 (NOAA estimate). The UN (UNCTAD) estimates the global economic losses in 2017 due to climatic events at about USD 320 billion. The Uttarakhand disaster of 2013 in India estimated a loss of about USD 2 billion just to its tourism sector, with 15000 KMs of roads destroyed, thousands of homes, hotels, schools, hospital... destroyed beyond repair. In the same year 2013, Typhoon Haiyan hit Philippines, with an estimated economic loss of USD 6 billion. The EU took a hit of wellover Euro 500 billion in the last decade and a half, due to climatic changes. An analysis by the non-profit Christian Aid showed that just the 10 largest Climate Extreme events of 2024 caused a loss of USD 229 billion ! (As the USA and EU records their losses more meticulously than the developing countries that suffer greater losses, and more of their losses are insured, ![124] it's comparatively easier to find the loss figures. NOAAs National Centre for Environmental Information reports that - "The U.S. has sustained 403 weather and climate disasters since 1980 where overall damages/costs reached or exceeded $1 billion (including CPI adjustment to 2025). The total cost of these 403 events exceeds $2.945 trillion". ![125]

According to an assessment by the World Bank, one single catastrophic climate extreme event, the 2022 Pakistan floods, "Pakistan: Flood Damages and Economic Losses Over USD 30 billion and Reconstruction Needs Over USD 16 billion - New Assessment". ![126] And these estimates do not include the finance needed for transition to low carbon economies, neither the amounts needed to compensate for undocumented / uninsured losses.

Soon after the CoP-15 in Copenhagen, Denmark, a so called Fast Start Finance for 2010-2012 - amounting to about USD 10 billion/ year was promised and "delivered". On analysis, it was found that a substantial part of these were rebranded /repackaged ODA (Overseas Development Assistance under the rich countries earlier obligations) and other old finance flows. The 'main vehicle for public climate finance', the GCF, has been struggling to raise finance, with a paltry USD 10.4 billion in its first 5-6 years. The GEF, Adaptation fund etc were all struggling to raise commitments in the face of a global economic slowdown and the rise of conservatism and protectionism in many countries, particularly after the financial crisis. The global climate finance scene is very skewed today. While the World Bank said that the Multilateral Development Banks MDBs have delivered USD 43.1 billion in 2018, a substantial 22% increase over the 2017 figure of USD 35.2 billion, the amount claimed to have been delivered by MDBs in 2023 is a substantial USD 125 billion, with 60% ($74.7 billion) going to low and middle income countries. ![127]

[123] Green Climate Fund. (2024). Annual report 2023. https://www.greenclimate.fund/annual-report-2023#:~:text=In%202023%2C,See%20the%20portfolio%20dashboard%20here

[124] Igini, M. (2025, March 20). Extreme weather events in 2024 led to highest number of new displacements since 2008. Earth.Org. https://earth.org/extreme-weather-events-in-2024-led-to-highest-number-of-new-displacements-since-2008/

[125] NOAA National Centers for Environmental Information (NCEI). (2025, June 12). Billion-dollar weather and climate disasters: May global release. https://www.ncei.noaa.gov/access/billions/

[126] Government of Pakistan. (2022). Pakistan floods 2022: Post-disaster needs assessment (Main report). Ministry of Planning, Development & Special Initiatives. https://www.worldbank.org/en/news/press-release/2022/10/28/pakistan-flood-damages-and-economic-losses-over-usd-30-billion-and-reconstruction-needs-over-usd-16-billion-new-assessme

[127] Alayza, N., Laxton, V., Neunuebel, C., & Thwaites, J. (2024, November 14). Multilateral development bank climate finance: The good, bad and the urgent. World Resources Institute. https://www.wri.org/insights/mdb-climate-finance-2023

This would be a substantial increase over the 2022 figure of $99.45 billion. But when one looks at the details, a very large part of these are loans and not grants, burdening many climate impacted poor countries in to more debt burden. The global Climate Finance Flows have reached some high figures of USD 579 billion per year in 2018 (averaged over 2017 & 18), a nearly 25% rise over average annual figures from 2015-16 (Paris Agreement was signed in 2015 December), according to a study by Climate Policy Initiative CPI. Private financial actors provide USD 326 billion of these, compared to USD 253 billion by public players. Again, on analysis, overwhelmingly large parts of these are loans, not grants, as originally envisaged.

On top of this, a much larger climate finance is flowing to mitigation projects - Solar and Wind power projects, low carbon transport etc, and very little in comparison to Adaptation projects that help vulnerable communities cope with severe impacts of the climate crisis. Region wise, North America and East Asia /China got the highest Climate Finance investments, NOT the poor and most vulnerable countries, the Least Developed Countries LDCs, the Small Island Developing States SIDS. To compare these seemingly high figures to what minimum is required - just the low carbon transition is estimated to need Climate Finance of between USD 1.6 Trillion to 3.8 trillion per year, from 2016 through 2050, just for the supply side energy systems transformation. In addition, the Global Commission on Adaptation estimates a minimum of USD 180-200 billion per year from 2020-30, and higher amounts thereafter.

The Indian Scenario : Though India boasts being "the fifth-largest economy in the World", our economic capacity is severely limited by the low per capita income and wealth of the average Indians. Our GDP per capita (an inadequate measure as the richest 10% owns a lions share of both) is a pathetic USD 2698, about as much as Bangladesh, and roughly one-fifth of World GDP per capita for 2023 was $13,138 on nominal basis[228]. Though by World Bank definition India has exited the Low Income Country category and entered the Low Middle income class, if one takes out the incomes of the top 10% of Indian people, the rest 90% drops to below sub-Saharan Africa income levels of around USD 1150 per capita per year. It's by the sheer number of poor people that India has an economic power, with a total GDP of around USD 3565 billion in the year 2023, giving it the fifth place in global GDP ranking. With these low per capita income / GDP figures, India's (and for other poor countries in similar situations, like Bangladesh) real capacity to self-finance large scale climate action is in some doubt. These do not preclude some domestic climate finance delivery by the India's Union government though.

Various studies have shown that the Indian economy is likely to lose anything between 3% to 10% of annual GDP, due to climate change impacts, by the years 2030, 2050 and 2100 ((Kompas et al., 2018; RBI, 2023), under a Business As Usual BAU scenario. Sectors of the economy that will be the hardest hit are Agriculture (including horticulture, fisheries etc), health, labour productivity (sharply increasing heat waves and other heat stresses), and infrastructure in vulnerable areas like the coasts and the mountains (in the past few years, we have seen increasing examples of these). Climate change impacts could be irreversible beyond a certain warming threshold, potentially catalysing the collapse of ecological, social and economic system, as the space for adaptation rapidly contracts. The Asian Development Bank has also projected:

[228] Macrotrends. (n.d.). World GDP per capita 1960-2024. https://www.macrotrends.net/global-metrics/countries/WLD/world/gdp-per-capita

India: Annualised climate investment needs (% GDP 2016-50)

Scenario	Total Investments	Low-carbon Investments
NDC	1.5% (0.5 to 4.3)	0.8% (0.1 to 3.0)
2°C	2.6% (1.1 to 6.0)	2.2% (0.8 to 5.0)
1.5°C	3.2% (1.2 to 6.9)	2.8% (1.0 to 5.9)

Source: McCollum et al., 2018

Quoting from a report by the Indian Institute of Human Settlements IIHS[229]
"An estimated annualised investment of USD 167 billion from 2016-2030 or around 8 per cent of India's GDP2015 (MoEFCC, 2015) is required to achieve India's Nationally Determined Contribution (NDC) targets. Low-carbon emissions pathways require significantly higher investments for a rapid energy transition. To achieve the 2°C goal annualised energy investments, 4 to 16 per cent of India's GDP2019 is needed; while meeting the 1.5°C target will require 7 to 18 per cent of GDP2019 over 2016-2050 (McCollum et al., 2018). Assuming equal annual investments till 2050, around 2.2 per cent and 2.8 per cent of GDP2015 is required in low-carbon sectors (see Table below). The transition to these low-carbon pathways will need a dramatic overhaul of India's economic investment and incentives and development priorities."*

Almost 10 years ago, the Government of India GoI estimated* (in its Economic survey of 2015) that we will need over USD 2.5 trillion by the year 2030, which turns out to be over USD 170 billion per year, which was quoted by the IIHS report. This was surely a gross underestimate, as many losses due to climate impacts are not even monitored and the focus of the government is mostly on the lage infrastructure losses, not those suffered by crores of poor and livelihood dependent people, whose losses are rarely covered by insurance.

The same IIHS report estimates the Climate Finance flows - "Indian climate finance flows have increased annually between 2017-2019 by 150 per cent to reach USD 44 billion by 2020 but remain grossly inadequate, and are concentrated in the power sector (CPI, 2022). Climate finance is also skewed in favour of mitigation (˜90 per cent) compared to adaptation (˜10 per cent). Domestic commercial finance is the most prominent source, followed by budgetary commitments. Private investments have grown but are largely limited to renewable energy. The total climate finance from MDBs to India was USD 1.9 billion in 2015, which increased to USD 3.7 billion by 2022 (European Investment Bank, 2023).[230]

[229] Srinivasan, M., Ghoge, K., Haldar, S., Bazaz, A. B., & Revi, A. (2023, November 27). Climate finance in India 2023. Indian Institute for Human Settlements. https://doi.org/10.24943/CFI11.2023
[230] Singh, D. (2017). Climate finance architecture in India: Exploring linkages between national and international governance. Centre for Budget and Governance Accountability (CBGA). https://www.cbgaindia.org/wp-content/uploads/2017/12/Climate-Finance-Architecture-in-India-1.pdf

This again shows the Achilles Heel of Climate Finance over the past two decades, that an overwhelming part of this has gone to (often commercially viable) renewable energy projects (which needs to be supported though), in the mitigation sectors, leaving critically needed Adaptation finance high and dry. With anything between 40—50crores working class people forced to work physically even in the exposed climate extreme conditions, Adaptation and Resilience building are life savers and can secure their livelihoods too. The costs of a reasonable minimum national adaptation program was estimated by the Department of Economic Affairs, GoI, to be INR 29 lakh crores in 2020, at 2012 constant prices. This was projected to sharply grow to INR 86 lakh crores by the year 2030. Another estimate of how much climate adaptation finance of all kinds was available, came to an estimate of INR 37,000 crores, or about 1.2% of that needed (CPI 2022) !.

Most of these came from the budgetary support of the government. If one looks at the pitiable financial conditions of the State (provincial) governments, particularly after the GST was implemented, it's hard to expect that these State governments, who are and will face the music of massively climate change / disaster hit populations, can provide any reasonable relief on their own. Also, given the serious balance of payment situation of the already least responsive union government, that primary source will also be very selective and discriminatory, as we have seen in the case of climate triggered disasters in opposition party ruled States like Kerala and Himachal Pradesh, in 2024 and 2023. Despite our National Action Plan on Climate Change (NAPCC), the nine National Climate Missions and each State having (the second iteration) its State Action Plan on/for Climate Change (SAPCCs), very little attention has gone into this vital need. Though the National Mission on Sustainable Agriculture and the National Water Mission were expected to focus attention on this climate change adaptation and resilience needs, their focus is almost entirely on large infrastructure and businesses. This lack of prioritization and political will has translated in to very little climate finance going into adaptation and resilience work.

This dire situation needs to drastically change, and change fast, looking at the fast increasing climate change impacts. But that necessary change is nowhere to be seen on the horizon.

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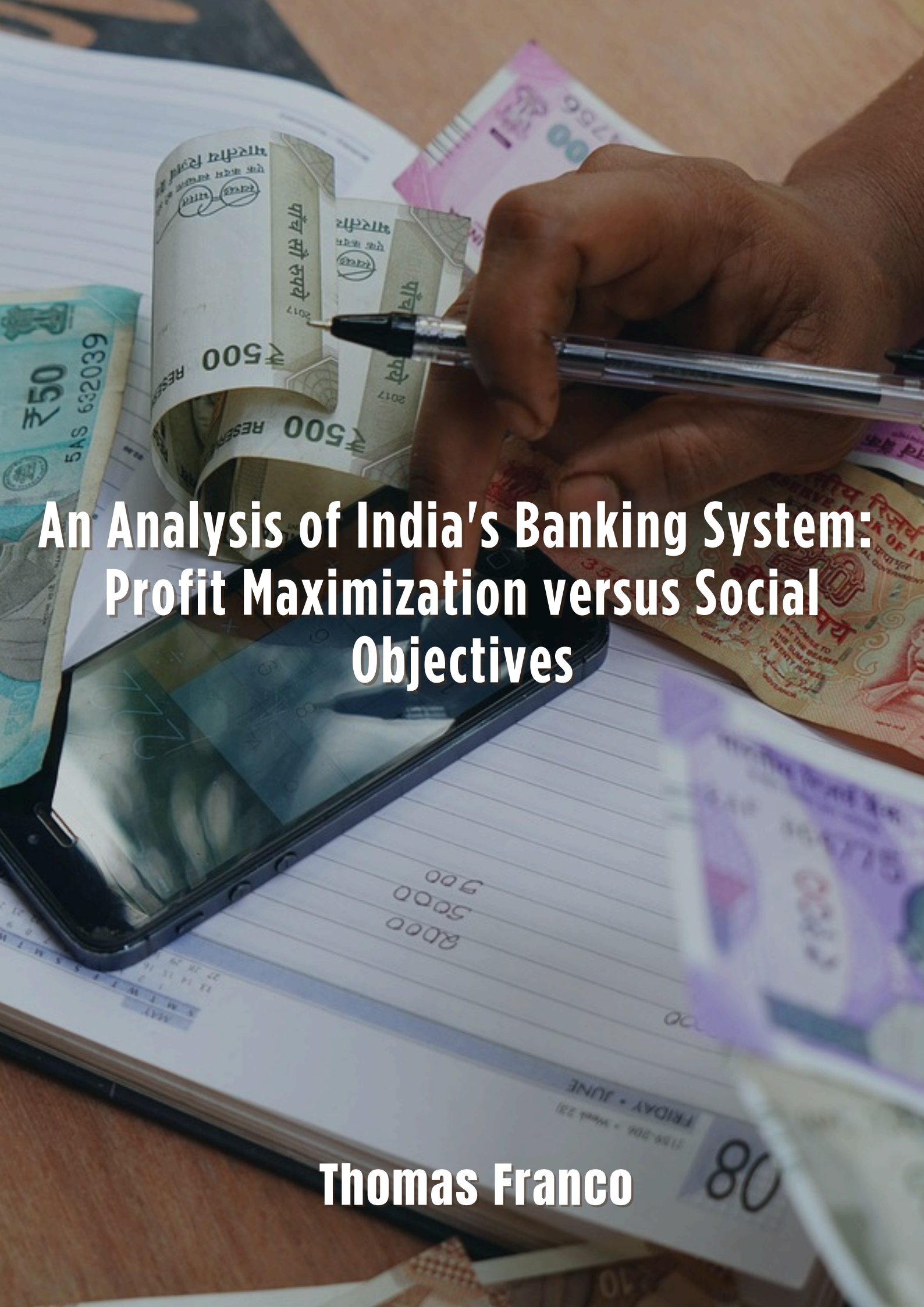

An Analysis of India's Banking System: Profit Maximization versus Social Objectives

Thomas Franco

An Analysis of India's Banking System: Profit Maximization versus Social Objectives

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Official statements from the Finance Minister, Prime Minister, and media outlets present an optimistic assessment of India's banking system, highlighting increased profits, deposit growth, and expanding credit flows. However, this narrative raises fundamental questions about whether profit maximization has become the primary objective of public sector banks, potentially undermining the original goals of nationalization.

The Profit Imperative and Its Costs

Public sector banks reported profits of Rs. 1.41 lakh crores (Rs. 1.41 trillion) in the financial year 2023-24, representing a 35% increase from the previous year's Rs. 1,04,649 crores. Punjab National Bank exemplified this trend with a remarkable 228% profit increase. However, the recovery amounts from high-profile defaulters such as Nirav Modi and Mehul Choksi remain undisclosed and unexamined.

While The Economic Times attributes these profits to systemic reforms—including Non-Performing Asset (NPA) recognition, debt resolution and recovery, bank recapitalization, and financial system reforms—the underlying costs of this apparent success warrant critical examination.

The Write-off Paradox

A closer analysis reveals significant contradictions in the profit narrative. In 2023-24 alone, banks wrote off Rs. 1.70 lakh crores, exceeding their reported profits. Over the past five years, total write-offs reached Rs. 9.90 lakh crores, as reported to Parliament. The nine-year cumulative write-off stands at Rs. 14.56 lakh crores, with Rs. 7.40 lakh crores attributed to large corporate borrowers. This approach to NPA "resolution" demonstrates minimal actual recovery. The case of Anil Ambani illustrates this phenomenon: once ranked as the world's sixth-richest individual in 2008, he became an NPA borrower. Reliance Communications, owing Rs. 49,000 crores to banks, was settled by the National Company Law Tribunal (NCLT) for merely Rs. 455 crores (0.92% of the outstanding debt), with the takeover executed by Mukesh Ambani's company. Despite this financial distress, Mint reported on October 22, 2024, that Anil Ambani announced a $1.2 billion (Rs. 10,147.3 crores) investment over ten years for an ammunition project.

Similarly, the Adani Group acquired ten companies with outstanding loans of Rs. 62,000 crores for just Rs. 16,000 crores. Between 2016-17 and 2020-21, the government infused Rs. 3,10,997 crores as capital to offset these write-offs, indicating systemic banking inadequacies.

The Burden Transfer Mechanism

The costs of corporate write-offs are systematically transferred to ordinary citizens through multiple channels. Savings bank deposit interest rates have declined from 5% to 2.5%, while fixed deposit rates have fallen from historical highs of 16% to current levels of 6.5%. Additionally, banks have imposed numerous fees, penalties, and charges on retail customers.

This creates a stark dichotomy: education loan borrowers pay 11% interest, and MSMEs face similar rates, while corporations securing loans above Rs. 100 crores can access credit at 4% interest. This structure effectively subsidizes corporate borrowing through the financial burden placed on small depositors and borrowers, contradicting the foundational objectives of bank nationalization—providing affordable credit to ordinary citizens, marginalized communities, and those at the economic pyramid's base.

The Shadow Banking Ecosystem

The Reserve Bank of India has departed from its traditional principle prohibiting banks from lending to other lending institutions. This policy shift has encouraged lending to Non-Banking Finance Companies (NBFCs) and Micro Finance Institutions (MFIs), which function as modernized versions of traditional money lenders.

Historical evidence demonstrates the volatility of NBFCs and MFIs, with recent failures including IIFL and DHF. Despite regulatory actions—including bans and fines for overcharging and illegal practices—these institutions continue to be promoted under the guise of financial inclusion. Monthly failures of one to two companies within this ecosystem create localized debt crises due to usurious interest rates and unethical recovery practices, earning the designation "shadow banking."

Market Access and Intermediation

The retreat of mainstream banks from small-scale lending has forced borrowers into the shadow banking system for two-wheeler finance, auto finance, commercial vehicle finance, and MSME financing. This has created a parallel intermediation system that breeds corruption: luxury car dealers function as brokers, home loan counselors serve as intermediaries for housing finance, and chartered accountants broker MSME loans. The government tacitly encourages these practices to avoid expanding bank staffing.

Co-lending and Fintech Integration

The RBI's approval of co-lending arrangements, such as Adani Capital's partnership with SBI, represents a concerning development. Multiple banks have entered similar agreements with NBFCs and Fintechs. Technology companies like Google operate banking-like services without proper licensing while accessing comprehensive customer data. Fintech companies employ predatory lending practices, resulting in documented cases of borrower harassment, fraud, and suicides, with Gujarat reporting a disproportionate share of such incidents. Despite these documented problems, regulatory intervention remains inadequate. The solution requires expanding public banking infrastructure through increased bank numbers, branch networks, and staff strength to provide safe, affordable credit access.

Reform Rhetoric versus Reality

The term "reform" has been systematically misappropriated in Indian policy discourse. Genuine reform should enhance citizens' lives and reduce inequality as mandated by constitutional principles. However, current "reforms" encompass privatization, bank consolidation, staff reduction, job outsourcing, and the exploitation of business correspondents as inadequately compensated workers.

The reduction from 28 to 12 public sector banks has diminished rural and semi-urban branch presence. Essential services—including messenger duties, transportation, sanitation, cash management, ATM operations, and security—have been outsourced to agencies operating without reservation policies, proper working conditions, or retirement benefits. The 22 lakh business correspondents operating Customer Service Points (CSPs) perform functions that should be handled by regular employees, again without reservation policy compliance.

Public sector banks maintain a customer-to-employee ratio five times higher than private banks while managing disproportionately large government scheme portfolios. The appropriate response involves nationalizing private banks, expanding branch networks, and implementing massive regular staff recruitment. Converting CSPs into full banking branches with adequate staffing (one officer, two clerks, one messenger) would enable lending capabilities currently unavailable through CSPs.

Consultant Influence and Policy Direction

International consulting firms, particularly those aligned with World Bank, IMF, and multinational corporate interests, have gained significant influence over Indian banking policy. The Boston Consulting Group (BCG) exemplifies this phenomenon, promoting profit-maximization strategies that disregard social contexts. BCG's recommendations to Indian institutions, including the State Bank of India, have included HR restructuring and aggressive product cross-selling, resulting in employee welfare deterioration and customer dissatisfaction.

BCG's approach ignores union consultation and undermines staff morale while disregarding banking's social function in supporting marginalized populations and priority sectors. Their market-oriented recommendations contradict India's specific developmental context and requirements.

Demographic and Structural Analysis

As of March 2024, public sector banks maintain 159.69 crore deposit accounts compared to private banks' 41.48 crore accounts. The branch distribution reveals 55,038 rural branches, 30,752 urban branches, and 32,044 metropolitan branches. Private banks' concentration in profitable urban and metropolitan markets demonstrates their profit-focused approach rather than comprehensive financial inclusion. Despite managing significantly greater social responsibilities, public sector banks employ 7,46,679 staff members compared to private banks' 8,46,530 employees, indicating the need for structural corrections to serve public interests effectively.

Credit Distribution Patterns

Historical lending patterns reveal a systematic shift away from small borrowers. In 1972, loans below Rs. 10,000 constituted 90% of total disbursements. By 1991, loans below Rs. 25,000 represented 95% of total lending. In March 2024, loans under Rs. 2 lakhs comprised only 73% of disbursements, achieved primarily through 84.5 lakh PM Svanidhi loans (Rs. 10,000 or below) and 46 crore MUDRA accounts (80% or 36.8 crores under Rs. 50,000). Conversely, 449 borrowers accessed loans at below 5% interest rates, totaling Rs. 1,67,063 crores, with minimum individual loans of Rs. 100 crores. This creates an inverse relationship where the largest borrowers receive the most favorable terms.

Sectoral Credit Allocation

State Bank of India, despite serving 50 crore customers, provides services to only 20 lakh SME customers with total lending of Rs. 4 lakh crores. Agricultural and allied activities receive Rs. 3 lakh crores for 1.5 crore borrowers, while corporate lending reaches Rs. 11.38 lakh crores. Punjab National Bank's allocation demonstrates similar patterns: Rs. 1,58,188 crores to agriculture, Rs. 1,39,288 crores to MSMEs, Rs. 4,22,341 crores to corporations, and Rs. 1,34,190 crores to NBFCs. This allocation structure contradicts employment generation priorities, as agriculture, MSMEs, and trade create more jobs than corporate sectors. The current lending pattern abandons employment-generating sectors, forcing small borrowers into high-cost NBFC financing with unethical recovery practices.

Governance and Oversight

The Nationalisation Act mandates one officer director and one workmen director on all public sector bank boards. No appointments have occurred since 2014, rendering boards opaque and unaccountable. The All India Bank Officers Confederation filed a Delhi High Court case in 2017 to enforce legal compliance, but the Finance Ministry has prolonged proceedings. The Act also requires farmer representation on boards, which has never been implemented.

Conclusions and Recommendations

The banking sector requires comprehensive reform prioritizing majority welfare and democratic governance over crony capitalism. Essential measures include massive recruitment drives, bank and branch expansion, and ensuring minimum 50% credit allocation to farmers, MSMEs, women, and youth with specific micro-enterprise targets.

Public deposits constitute people's money held in trust by banks and must serve public welfare—the 90% of citizens currently underserved by the system. Only through this approach can banks fulfill the redistributive function envisioned during nationalization, transforming from profit-maximizing entities into instruments of inclusive economic development.

Tracing India's Labour Migration to the Gulf

Usman Javed

Tracing India's Labour Migration to the Gulf

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This article provides an overview of the phenomenon of labour migration to the Gulf from India. It is divided into four sections. We begin by understanding the scale of this migration stream and the dependence of destination economies on this set of workers. We then discuss recent trends in the pace of migration and changes in the migratory demographic, and look at the important role of remittances. In the third section we discuss the challenges faced by workers, from structural ones such as unregulated recruitment practices to adverse health impact and unexplained deaths, as well as the lacunae in the legal-administrative framework which governs migration. Lastly, we summarily discuss important steps that can redress the situation described in the preceding sections.

Scale and Structural Importance:

India has the largest emigrant population in the world with approximately 18 million Indians living outside its territory in 2020[231]. The bulk of these 18 million are temporary blue collar workers migrating to the six states of the Gulf Cooperation Council (henceforth GCC)[232]. In comparative terms, the India-Gulf labour migration corridor represents the second largest international migratory movement of workers, behind only the Mexico-USA corridor.

Approximately 9 million workers from India are estimated to be working in the six GCC states[233]. Considering the Indian workforce stands close to 500 million, Gulf migrants equal about 2% of the same. The total population of the GCC region stood at 56 million in 2021. Of these, more than half are estimated to be migrant workers. At close to 10 million, Indian nationals make up over 1/3rd of the total migrant workforce and roughly 1/6th of the total population in the region. States in the GCC have varying proportion of migrants in their population. While migrants make up under 40% of the population in Saudi Arabia, they account for over 80% of the populations in the United Arab Emirates and Qatar. The most favoured destinations for Indian workers in the GCC are Saudi Arabia and the UAE, with sizeable numbers in each of the remaining four.

The economies of the GCC states rely heavily on migrant workers from South and Southeast Asian countries. Migrant workers comprise over half the total population of these countries, and overwhelmingly populate the ranks of blue collar workers in labour intensive sectors such as construction, hospitality, domestic work, sanitation, care work and ancillary business activities. Shoddy labour laws that give employers immense disciplinary control over workers and a rigid immigration system produce what scholars have referred to as the Kafala system[234]

[231] (McAuliffe and Triandafyllidou, World Migration Report 2022, 2021, 25)
[232] These include Saudi Arabia, Kuwait, Bahrain, Qatar, United Arab Emirates and Oman.
[233] According to data provided by MoS MEA, V Muraleedharan, to the Lok Sabha in December 2022, there were 87.5 lakh Indians in the GCC. (Ministry of External Affairs, 2022) This figure does not account for many women workers who work as domestic workers. This is due to the policy change brought about in 2016 which mandated that all female workers travelling to these countries must go through six public sector recruitment companies. This effectively resulted in most women going through irregular channels rendering them more precarious. The figure also does not account for the phenomenon of workers sent on visitor visas by agents. It is common practice to send a worker on a visitor visa, for them to be interviewed/tested on the job and then provided a work visa at destination. So, at any given point of tie, there is a sizeable portion of workers who are not represented in the official numbers. Hence, it would be reasonable to peg the total number higher, perhaps at 10 million.
[234] For a grounded understanding of what the kafala systems are across GCC states, see the (migrant-rights.org n.d.) For evidence of abuse enabled by kafala see (Human Rights Watch 2020) and (migrant-rights.org 2015)

resulting in excessive exploitation as well as routine abuse of the labour and human rights of these workers. The combination of these factors results in a closed labour market where workers have to rely on employers for all rights and benefits, including residency, mobility, access to healthcare, etc. With workers not allowed to organise and a non-existent redressal mechanism, stories of widespread wage theft, abuse and exploitation and an abnormally high incidence of unexplained deaths among the workforce are reported. As such the situation results in systematic violation of migrant workers' rights.

The Northern Shift and Increasing Remittances

The Indian migrant population in the Gulf has expanded eleven-fold over the last four decades. From only 8 lakh in 1983 their numbers reached 33 lakh by 2001 (Khadria 2006) and 88 lakh by 2022 (Ministry of External Affairs 2022). This exponential increase has been driven primarily by blue collar migrants. According to government data, between the years between 2008 and 2016 over 63 lakh emigration clearances[235] for the 18 ECR countries were given between these years, the overwhelming majority of which bulk of which are for the six Gulf countries. While the number of clearances has declined from these high levels, and plummeted during the Covid years of 2020 and 2021, the last two years show a restoration to pre-pandemic levels with around 3,29,699 and 3,98,321 clearances being granted in 2022 and 2023 respectively.[236] Noushad, Parida and Raman (2020), show that emigration stock from India to the GCC increased at an annualised rate of 7.4% between 2000-2005, 14.6% between 2005-10 and at 5.6% between 2010-17.

Looking at the numbers since 2007 we can see that the states of Uttar Pradesh, Bihar, Rajasthan and West Bengal have sent much larger number of workers to the GCC than Kerala, Tamil Nadu, Andhra Pradesh or Telangana. To be sure, workers from the latter states have continued to migrate, but in proportional terms the North has outweighed the South. This is readily understandable given the much larger population and the more stressed labour market in the Northern states as well as the decline in wages post the 2008 GCF.

The change in migratory demographics has gotten consolidated over recent years. Today every second Indian in the GCC is either from Uttar Pradesh or Bihar. This is a massive transformation, the impact and consequences of which have yet to be properly grasped by policymakers.

Remittances:

India received over $111 billion or 9.1 lakh crore in 2022,[237] making it the top remittance recipient in the world. According to World Bank data, the share of remittance to GDP in the Indian economy has increased from 1% in 1992 to 3.3% in 2022.[238]

Increasing remittances over his period are a result of high income Indian workers in advanced economies such as the USA, UK, Singapore, etc., and a very large number of low income earners from the Gulf countries.

[235] ECR (Emigration Check Required) clearances are a proxy for blue collar workers. ECR checks are a tool used by the Government of India to identify potentially vulnerable workers migrating abroad
[236] All figures in this paragraph not attributed to other sources are based on the author's analysis of the annual reports on Emigration Clearances released by GoI.
[237] (McAuliffe and Oucho, World Migration Report 2024)
[238] (World Bank Group 2024)

This is reflected in the list of top remittance sending countries. Along with the USA and the UK four of the six GCC countries find a place in the top ten highest remittance sending countries to India[239]. Earnings remitted by medium and low income earners have a stronger developmental impact on the source region because these earnings contribute towards consumption of essential goods and services (such as improved diets, healthcare and schooling) and productive investment (such as better housing, small business investments). Despite the low wages earned by a majority of young migrants to the Gulf, their earning are a source of unparalleled support for households at source that often rely on these remittances as their main source of income[240].

Challenges

Lack of regulation and social security:
Despite being doubly important – both to the source as well as destination economies, these workers do not have a voice and their lives are governed by a poorly regulated recruitment industry. The labour regimes in destination countries are hostile to migrant workers, despite having formal mechanisms for dispute resolution, etc. What is even more striking is the lack of support these workers receive from their own governments.

The Emigration Act of 1983 is the primary instrument through which the Indian state regulates labour emigration. This law provides for the creation of the office of the Protector General of Emigrants, the main institution tasked with ensuring rights of workers are protected. It is no exaggeration that the law and the institutional mechanism it sets up fall well short of recognising or addressing workers' needs. A new Emigration Bill has been in the works. Unfortunately, it too fails in recognising that particular attention is needed in order to address the concerns of this massive workforce of Indians in the Gulf.[241] The only scheme targeted at these workers is the Pravasi Bhartiya Bima Yojana, which provides a death and disability cover of Rs 10 lakh to Indian emigrant workers in case of work-related disability or death. However, it remains ineffective as most worker deaths are misleadingly attributed to 'natural causes' in the destination countries. This failure is reflected in the fact that on average only 38.5 claims were settled between FY 2019-20 and 2022-23, according to data submitted by the union government to Parliament in February 2024[242].

As a result of poor labour standards and lack of state initiative to regulate the terms of work and provide social protection, low income workers have to work in harsh working conditions, such as extreme heat and humidity. These conditions, compounded by a lack of accountability, result in workers in the region suffering severe violations. We look at three of these below.

Unexplained Deaths:

Migrant workers recruited to work in the Gulf have to undergo medical tests to ensure they are in good health. As a norm, workers over 45 years of age are recruited for jobs requiring manual labour. Despite this, the region is marked by a very high incidence of unexplained deaths among migrant workers.

[239] We must note however that the share of remittances coming from the Gulf peaked in 2016-17 at 54%. Since then, the sustained rise has been a result of high income earners remitting earnings from advanced economies.
[240] By contrast there is a higher chance of remittances by high income earners going towards luxury consumption and speculative investments.
[241] The new draft Bill lacks a human rights framework and can be thought of as being restricted to an act of administrative streamlining. See (Eapen 2021)
[242] (MINISTRY OF LABOUR AND EMPLOYMENT 2024)

A study conducted in 2022 by the Vital-Signs partnership,[243] analysed available data on deaths of migrant workers from five Asian countries in the six GCC states. It revealed that approximately 10,000 migrant workers from south and southeast Asian die every year in the Gulf, with more than half of those deaths effectively unexplained. Between January 2014 and October 2019, 33,930 Indian workers died in the GCC.[244] Moreover, serious discrepancies exist in the number of worker deaths recorded.[245] There are clear signs of the cause of deaths being misreported.[246] These systematic discrepancies show how that proper post-mortems and medical analysis is not the norm and any relation of the death to work related causes therefore are invisibilised. If standard practices were followed and the Indian government cared enough, employers could be held liable for compensating workers' families in cases of work related deaths.

Life altering injuries and long term health impacts:

When we think of work related injuries the focus often is on workplace accidents. While this is indeed an important aspect to focus on, environmental factors such as extreme heat and humidity make the GCC unsuited for outdoors work for much of the year.[247] These factors result in a wide range of impacts on the health of workers, from heat strokes to injury to internal organs. An example of the latter is the discovery of Chronic Kidney Disease of unknown origin (CKDnt) sustained as a result of work accidents among young Gulf returnees in Nepal.[248] The link between continuous exposure to high heat and kidney disease is an emerging area of focus for occupational health specialists. According to professor Vivekanand Jha,[249] there is a clear association between CKDnt and abusive work in extreme heat.[250] In addition to specific heat related injuries, heat strokes impair cognitive function leading to workplace accidents. Poor living conditions of migrant workers in the Gulf also contribute to a range of ill effects on workers' health.[251]

In terms of understanding the impact of extreme heat on workers' bodies, which has become a pressing issue given the onset of climate change, migrant workers in the gulf are the proverbial canary in the coalmine. Their bodies are enduring ambient and metabolic strains that many others will face tomorrow. As such, their situation is also an opportunity for creating OSH frameworks and safety measures that can protect future workers as well.

Recruitment Fee, Debt and Precarity:

The migration of blue collar workers to the GCC is explained by Gulf states and some economists as being beneficial to all parties. It benefits the receiving state by providing a source of cheap labour on which these economies rely. For the sending state the exodus of migrant workers relieves labour market pressures and provides much needed foreign exchange earnings. The workers themselves also benefit due to relatively higher incomes and the possibility of social mobility.

[243] (Vital Signs 2022) Vital Signs is a coalition of non-profit organisations from five origin states (India, Bangladesh, Nepal, Pakistan and The Philippines) and FairSquare, a UK-based non-profit. See Vital-Signs partnership for more

[244] As per reply to Lok Sabha unstarred question no 637, answered on 20 November 2019. (Ministry of External Affairs 2019)

[245] "Whereas India's Minister of State in the Ministry of External Affairs said that 12,595 Indians had died in the Kingdom between 2015 and October 2019, the Indian Embassy in Saudi Arabia, responding to a right to information request from the Center for International Migration Studies in Kerala said that 7,444 Indians had died in almost exactly the same period- a difference of 5,151 people. Despite the number of migrant workers it employs, Saudi Arabia publishes no meaningful mortality data so India's data cannot be cross-checked against anything published by Saudi Arabia." (Vital Signs, 2022, p 7) (MINISTRY OF LABOUR AND EMPLOYMENT 2024)

[246] "A more systematic discrepancy is evident in the distribution of causes of death. According to the Indian authorities in Kuwait, 42% of deaths were classified as heart attacks. The Indian authorities in Bahrain, meanwhile, reported that only 4% of Indian deaths there were from heart attacks, while 47% were attributed to "cardiac arrest"." (Vital Signs, 2022, p 7)

[247] "In most parts of the Gulf, there are between 100 and 150 days when maximum daily temperature exceeds 400C. For the same period, the annual average in New Delhi is 24 days. Extreme temperatures are not rare "heatwave" events in the Gulf, but present for three to five months of every year." (Vital Signs 2023, 6)

[248] See (Pattinson and Acharya 2023) and (Shih 2023)

[249] Chair of Executive Director at The George Institute for Global Health, India, and Chair of Global Kidney Health at Imperial College London

[250] (Vital Signs 2023, 15)

[251] Read about two cases from Telangana (Srinivas Chandanagiri and Gangadhar Motapally), where workers suffered life altering injuries and death in forthcoming (Jawed 2024)

This view, however, has been denounced by critical scholarship on global labour migration. The mainstream position that promotes triple-win scenarios is shown to be "essentially one-sided, de-contextualized, reductionist, and misleading. It overlooks the realm of neoliberal globalization and unequal development in which contemporary migration is embedded...In addition, it masks most of the fundamental contributions made by migrants to the destination countries, and ignores the costs of migration for the countries of origin; costs that go far beyond the overemphasized 'positive' impact of remittances." (Wise, 2015, p.39)

The worsening employment crisis in India and the pressures it creates is a major reason for blue collar workers aspiring to migrate to the GCC. This point is best exemplified by the huge debts workers incur in their bid to get work in the Gulf. There are 1,988 registered recruiting agents in India. Concentrated in major cities like Delhi (286) and Mumbai (588), these companies rely on a vast network of unlicensed sub-agents to find workers. Prospective migrants have to go through a chain of sub- agents who each charge a fee, thus inflating costs that are due to the employer. Therefore, not only do workers pay for their own recruitment, these costs are highly inflated as a result of an unregulated recruitment industry which benefits from the workers' precarity.

As per the International Labour Organisation's general principles and operational guidelines for fair recruitment and The Private Employment Agencies Convention of 1997 (No 181) all recruitment related charges must be borne by the employer in the destination state.

A 2021 study[152] analysing five international migration corridors, found that employers in destination states would often create conditions for unethical recruitment, such as making recruiters in source (developing) countries commit to not charging them before giving them the contract, and even demanding 'kickbacks'. Surveys conducted by the ILO and the World Bank in 2015 and 2016 found the average recruitment fee paid by Indian workers to secure a job in Qatar and in Saudi Arabia was $1,156 and $1,507.[153] Such recruitment costs reflect several months of a low income workers' wage. FairSquare's exploratory field study in three districts of Bihar suggests that workers with fewer connections, migrating from new source areas are more vulnerable and susceptible to being charged more by agents.

Given the structural asymmetry of the situation, Indian and other developing country workers' pay a premium in the form of high recruitment fee for the privilege of being exploited, echoing Joan Robinson that the only thing worse than being exploited under capitalism is not being exploited. Workers are routinely misled and misinformed by unscrupulous agents about the availability of jobs and the terms of work. Once indebted, workers' lose all bargaining power prior to even getting a job interview.

What needs to be done

There are a number of things the Indian state should do in order to safeguard the interests of this set of workers. Primarily these include regulation of the recruitment industry, provision of support to workers in the destination countries, and welfare/support measures at home. For clarity and brevity, we break these down into different levels of governmental action below.

[152] See (The Five Corridors Project 2021)
[153] See KNOMAD-ILO Migration Costs Surveys 2015 and KNOMAD-ILO Migration Costs Surveys 2016

At the national level:

- A new Emigration Act: The new law must officially recognise the rights of migrant workers, with a focus on safeguarding them both domestically and overseas.

- Regulate the recruitment industry: At the national level, the government needs to regulate the recruitment industry. Not only are workers rendered precarious through the normal operations of an unregulated industry, the unregulated nature of the industry also has a cost in terms of loss of public money. By insisting on the employer pays principle, the government can help save millions of families from usurious loans and illegal fees. A greater role for Public Sector Recruiters is key in improving industry standards.

- Provide comprehensive insurance cover for migrants: The current insurance scheme (PBBY) has clearly failed. The death or disability of indebted workers, who are often the primary earners for their families can drive households into penury. Provision of a comprehensive and mandatory insurance scheme, which covers cases of natural death is vital.

- Ensure systematic data collection and maintenance on health of migrant workers: Overseas workers are a very well defined subset, and visible to the state unlike in the informal sector. It is through proper maintenance of hard evidence that other states can be held to account.

- At destination: Boost embassy staff and capacity of labour attachés. Provide legal aid to workers facing disputes with employers, etc.

At the State level:

- Creation of dedicated government departments: The first step in states with sizeable overseas migrants would be to create administrative capacity to deal with the concerns of this set of workers. Kerala, for instance, has NORKA (Department of Non-Resident Keralite Affairs).

- Provision of welfare measures: These include educational loans for children of migrant workers, measures for reintegration into local economies upon return, etc.

- NORKA implements schemes a range of social protection schemes as well as liaises with relevant ministries to assist migrant workers from the state in distress overseas. The government of Telangana has recently announced the creation of a Gulf d. Workers Welfare Board to achieve a similar objective.

- Maintain comprehensive data, through regular surveys and provide access to complaint redressal mechanisms.

At International fora:

- The existing international initiatives, whether bilateral (such as MoUs and labour mobility agreements) or multilateral such as The Colombo Dialogue are marked by a lack of serious regard for ordinary workers' rights and lives. One of the reasons why multilateral initiatives fail is because the sending states do not recognise their common interest.

- Strategic common interest of sending countries: Being the single largest source of workers in the region, accounting for 1/3rd of the total migrant workforce, India holds significant leverage to negotiate better terms with states in the GCC. This is a major strategic strength India has over smaller sending nations and puts India in a position to bring other sending states together on a common platform to ensure labour standards are adhered to in the Gulf.

- Right to form Unions: India and other sending states must insist on migrant workers' right to form and join unions and workers associations in destination countries.

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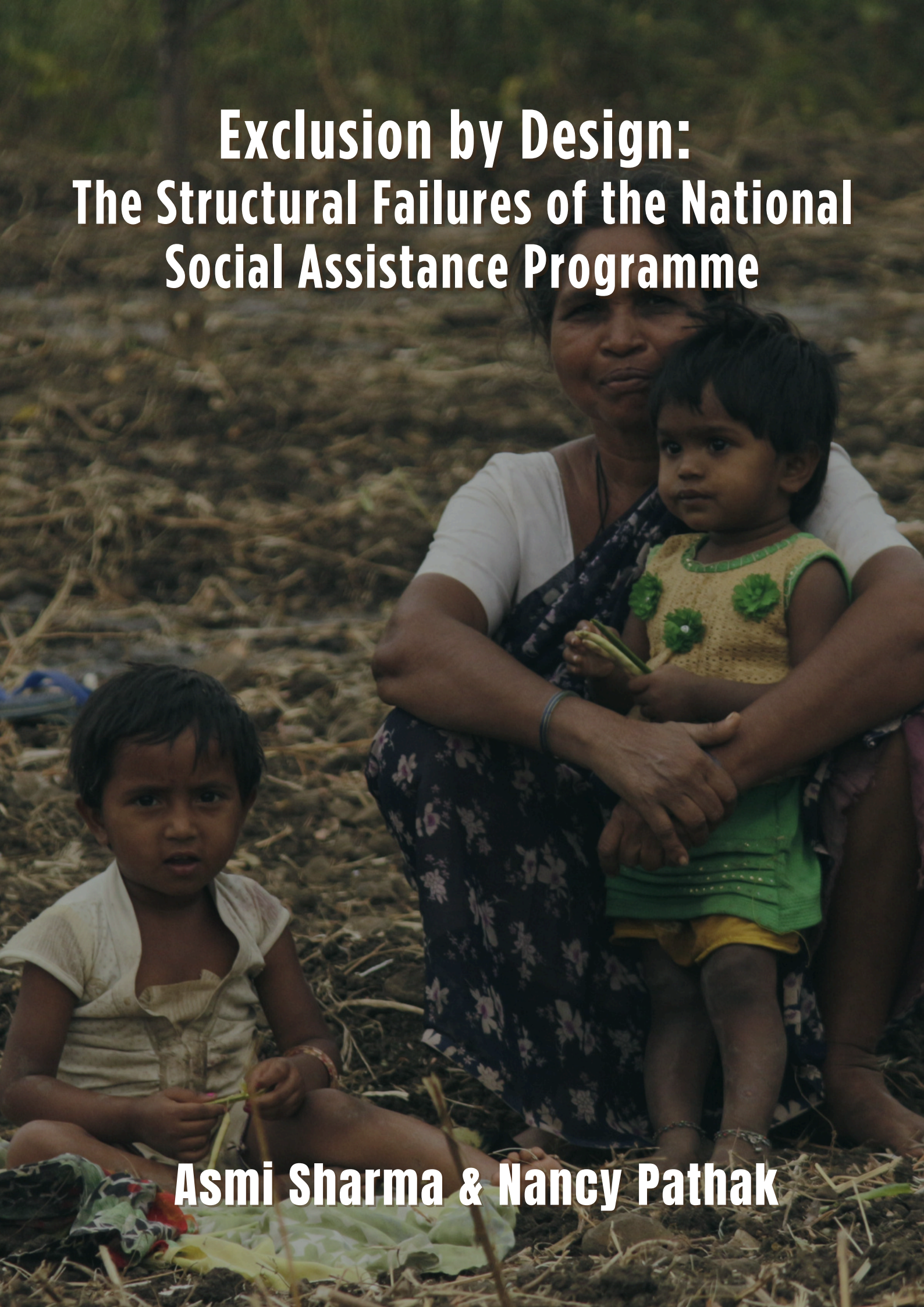
Exclusion by Design:
The Structural Failures of the National Social Assistance Programme



Asmi Sharma & Nancy Pathak

Exclusion by Design: The Structural Failures of the National Social Assistance Programme

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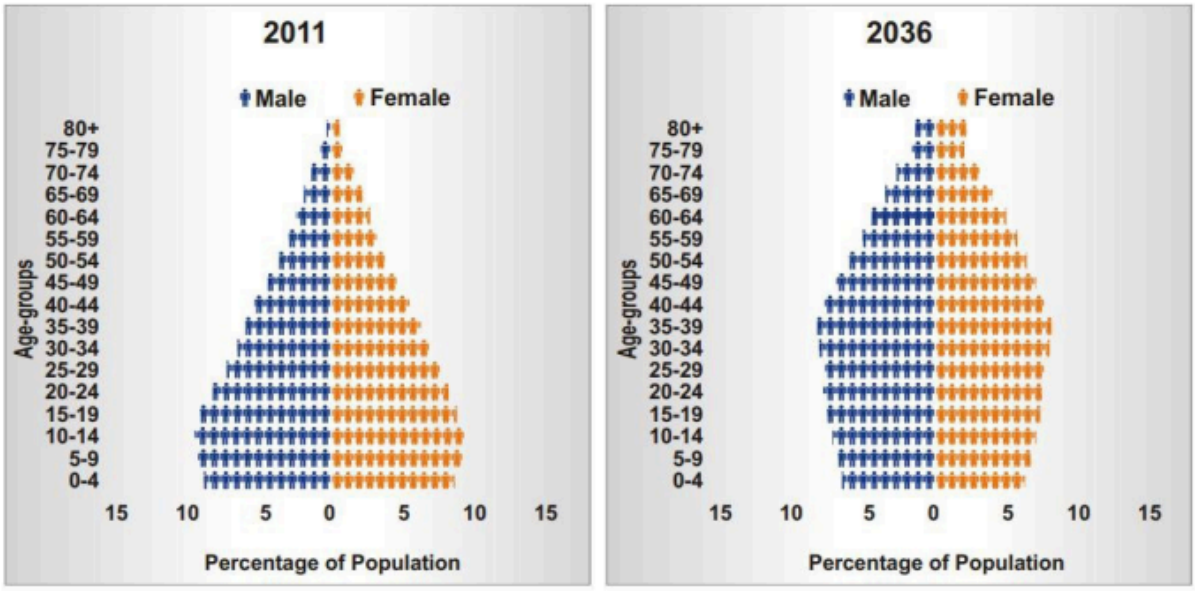
India's Demographic Shift and the Growing Need for Social Security

India is undergoing a demographic transition that requires an immediate response. With a rapidly ageing population, with the proportion of elderly (60+) projected to rise from 8.6% in 2011 to 12.4% by 2026 (Population Projections for India and States, 2001-2026)[254] - it is predicted that by 2050, one in five Indians will be elderly,[255] yet the country's social protection architecture remains inadequate in addressing their economic and health vulnerabilities to address the crisis that is silently unfolding.

Currently, there are 14.9 crore people aged 60 years or above, representing 10.5% of the population. With figures expected to rise from 14.9 crore elderly to 34.7 crore in the next 25 years which prompts the need to urgently rethink India's social security framework which not only addresses present gaps but also prepares for future care needs of ageing and vulnerable populations.[256]

Figure 2.1 : Age-wise profile of population by sex (%)



Source: Report of the Technical Group on Population Projections for India and States 2011-2036, Ministry of Health & Family Welfare, July, 2020

[254] CRISIL & Pension Fund Regulatory and Development Authority. (2017, April). Financial security for India's elderly: The imperatives. CRISIL Limited. https://www.pfrda.org.in/writereaddata/links/crisil%20pfrda%20report869bc61d-a231-42de-a77c-ff614b0af650.pdf

[255] International Institute for Population Sciences & United Nations Population Fund 2023. India Ageing Report 2023, Caring for Our Elders: Institutional Responses. United Nations Population Fund, New Delhi. https://india.unfpa.org/sites/default/files/pub-pdf/20230926_india_ageing_report_2023_web_version_.pdf

[256] Ministry of Finance, Government of India. (2024). EconomicSurvey2023-2024. https://www.indiabudget.gov.in/budget2024- 25/economicsurvey/index.php

Current Framework and Policy Design of NSAP

India's current social protection framework remains inadequate in supporting its ageing and vulnerable population, particularly those who are often unable to work. While schemes like MGNREGA and the PDS are essential for preventing poverty and managing economic shocks, they do not address the long-term need for income security for vulnerable and marginalised populations which is why minimum income support must be a core component of any robust social security system.

The India Ageing Report 2023 highlights that 40% of India's elderly belong to the poorest wealth quintile, and nearly 19% live without any income. Even schemes like Pradhan Mantri Jan Arogya Yojana, which aim to extend health coverage to six crore senior citizens, face serious implementation gaps. A nation-wide survey by a disability rights group revealed that 82% of persons with disability lack insurance and 42% were unaware of the PMJAY.[257] As a result, already financially vulnerable people continue to face high out-of-pocket expenses, pushing them deeper into poverty and often leaving essential healthcare out of reach.

Government efforts have increasingly focused on contributory pension schemes such as the PM-SYM and Atal Pension Yojana. However, these models are unrealistic for informal and daily wage workers - domestic workers, agricultural labourers, construction workers, who have no post-retirement benefits and cannot afford regular contributions. In an economy marked by stagnant wages, rising living costs, and low savings, contributory schemes end up excluding those who need support the most - within this context implementing a minimum non-contributory income support for vulnerable populations becomes essential.

In line with India's constitutional commitment to social security under Article 41 of the Directive Principles of State Policy, the National Social Assistance Programme (NSAP) was introduced in 1995 as a centrally sponsored scheme providing non- contributory income support to the elderly, widows, and persons with disabilities.

Under this programme, the Indira Gandhi National Old Age Pension Scheme (IGNOAPS) offers a monthly pension of Rs 200 to elderly individuals aged 60 to 79 years, which increases to Rs 500 for those above 80 years. The Indira Gandhi National Widow Pension Scheme (IGNWPS) provides a monthly pension of Rs 300 to widows between the ages of 40 and 59, with the amount increasing to Rs 500 for those above 80 years. Similarly, the Indira Gandhi National Disability Pension Scheme (IGNDPS) grants Rs 300 per month to individuals aged 18 and above with severe disabilities, which is also raised to Rs 500 once they reach 80 years of age.

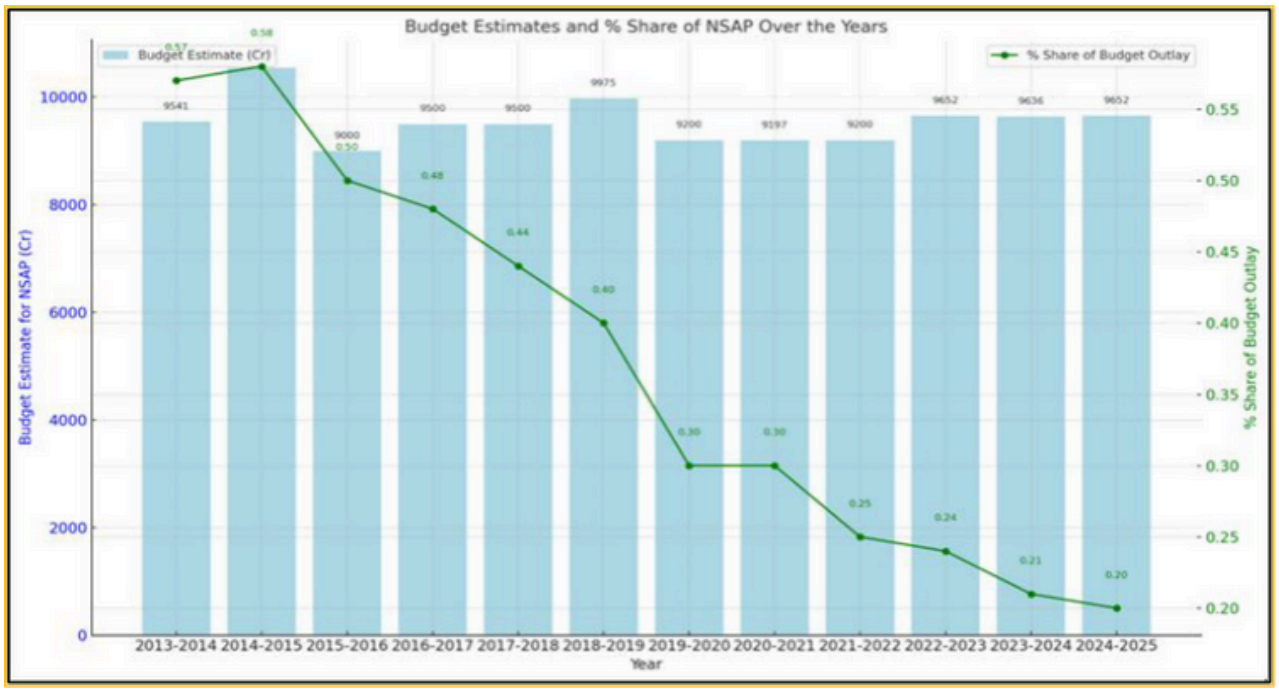
However with the rising inflations, costs of living, the current structure of NSAP fails to provide meaningful financial security, as these pension amounts remain grossly inadequate in meeting even basic subsistence needs and in the absence of inflation- linked adjustments further erode the real value of these pensions amounts continuing to leave millions of elderly, widowed women, and persons with disabilities in a state of persistent financial distress. However, an analysis of the policy design, implementation, and fiscal trends reveal that meagre pension amounts are only a part of systemic exclusionary mechanisms that plague the programme.

[257] Press Trust of India. (2025, March 30). 82% of PWDs lack insurance, 42% unaware of AB-PMJAY, reveals survey. Business Standard. https://www.business-standard.com/india-news/82-of-pwds-lack-insurance-42-unaware-of-ab-pmjay-reveals-survey-125033000454_1.html

Fiscal Neglect: Declining Budgetary Commitments

Pension amounts have remained unchanged for over a decade, last increasing for the elderly in 2007 and in 2012 for the IGNWP and IGNDP schemes. This is unsurprising, as the NSAP budget has also remained at a standstill at approximately Rs 9,500 crore since 2014-15, while inflation continues to erode its real value. This becomes more apparent when evidenced by the declining share of budget allocated for NSAP, which has declined from 0.58 % of the overall budget in 2014-15 to 0.20 % in 2025- 2026. To simply keep up with inflation over the past ten years, the programme's budget allocation in the current budget should have been well over Rs 18,000 crores.

Yet the current allocation to the programme for FY 2025-26 at Rs 9,652 crore is identical to the previous year, effectively reducing the budget's value to Rs 9,200 crore. The falling allocations are representative of the government's broader neglect towards social assistance, and without an increase in successive budgets, there has been no improvement in pension amounts. This pattern has persisted despite repeated alarm bells from economists and civil society recommendations to index pensions to inflation. While NSAP guidelines[258] encourage and in effect, pressurise the states to at least match or provide an amount more than the central contribution, this expectation has become an unfair financial strain, as states must fill the gap left by the center's incompetent funding. It's a two-fold setback for the states marred by the fiscal federalism crisis.

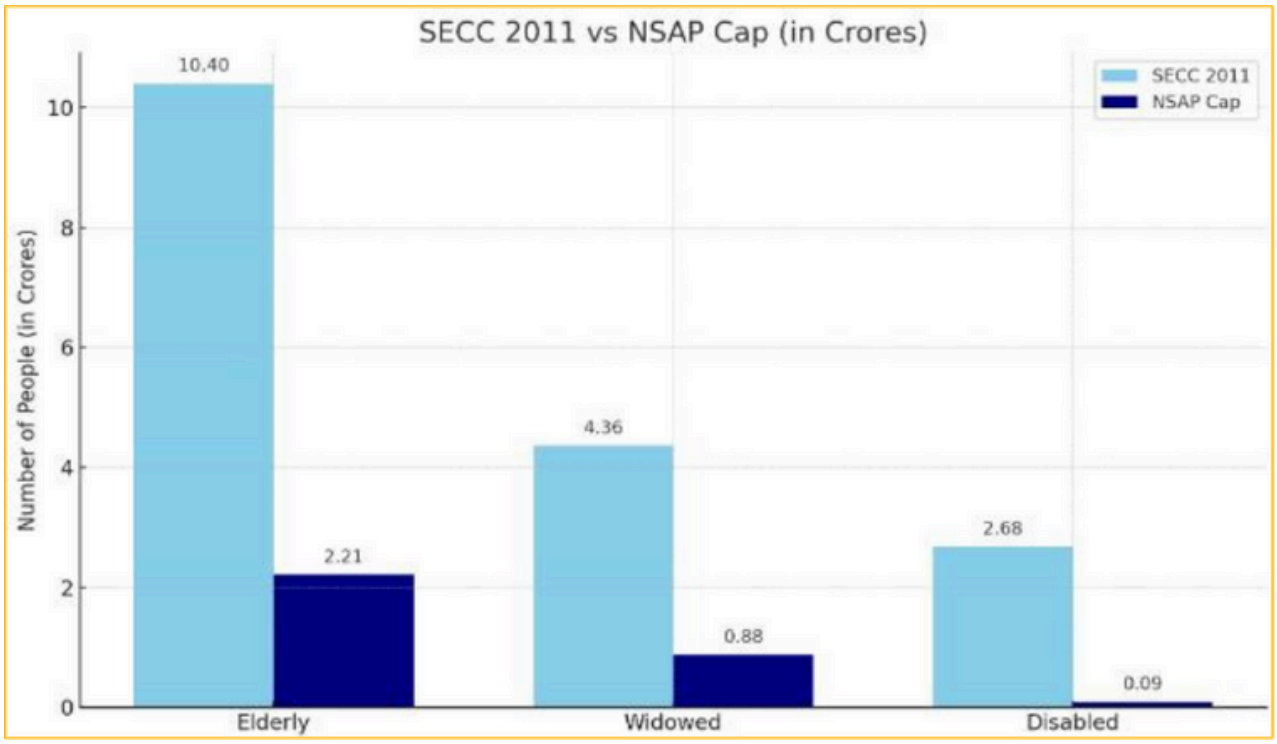


Source: Union Budget 2014-15 to 2024-25

[258] Ministry of Rural Development. National Social Assistance Programme guidelines. Government of India. https://nsap.nic.in/guidelines.html

Coverage Gaps and Lack of Proactive Identification

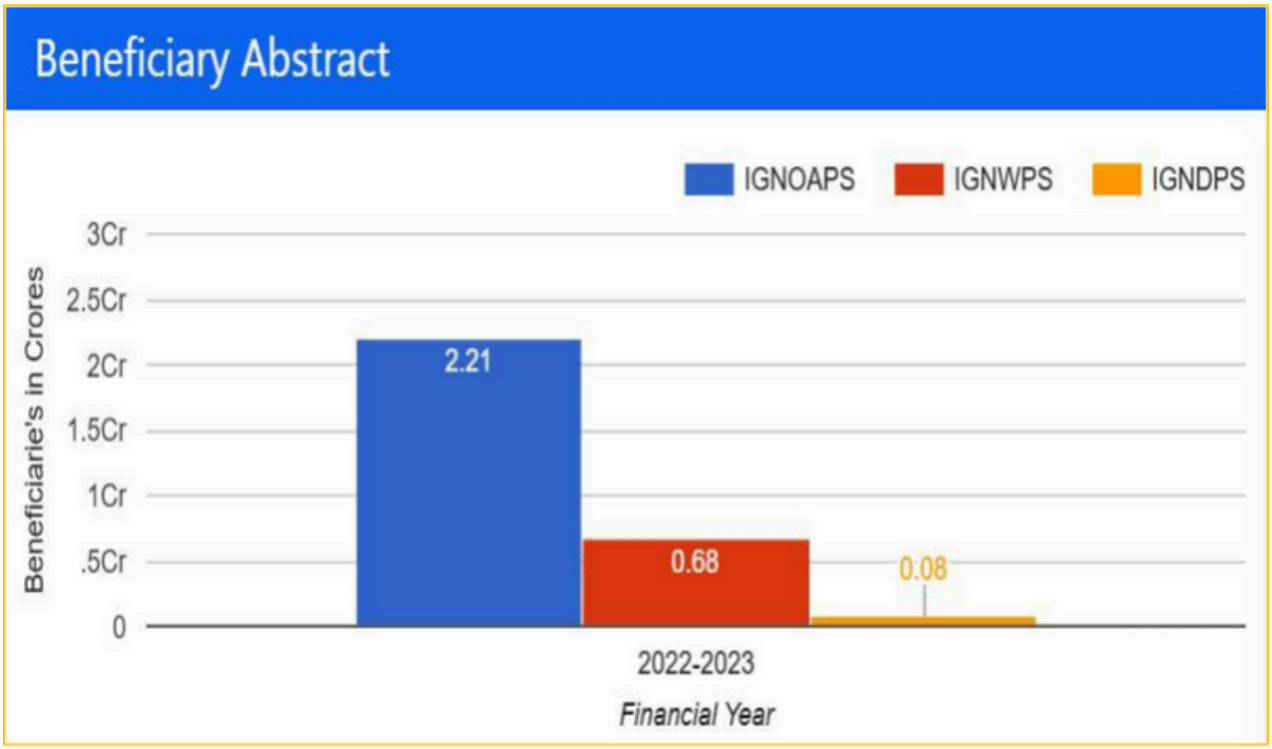
Another reason for the lack of change in pension amounts is that for decades the number of beneficiaries under the central scheme have been capped at at 2.97 crore, comprising 2.21 crore elderly individuals under IGNOAPS, 88.1 lakh widows under IGNWPS, and 8.8 lakh persons with disabilities under IGNDPS.



Comparison of eligible population SECC 2011 vs. NSAP coverage

The coverage of beneficiaries under this scheme is determined not by the latest projections of the 2011 Socio-Economic and Caste Census (SECC)[259] but using the archaic figures from the 2001 Census and the 2004 Planning Commission poverty ratio. As a result, there is a growing chasm between the documented need and actual coverage. This fixed and restrictive cap means that even as the number of eligible individuals continues to grow, the Centre does not expand its coverage. In turn, states are compelled to fill the gap by providing pension support to 6 crore additional eligible individuals, beyond the 3 crore that are currently covered under the central scheme, even though they meet the eligibility criteria prescribed.

[259] Ministry of Rural Development. Socio Economic and Caste Census. Government of India. https://secc.gov.in/



Current Coverage under NSAP

Exclusion Due to Stringent Eligibility Criteria

Beyond coverage caps, restrictive eligibility criteria have also excluded a significant number of individuals from qualifying benefits under NSAP. For instance, under IGNWPS criteria, central assistance is only available to widows aged 40 and above which overlooks the economic vulnerability of younger widows that are in need of financial support.

Similarly, stringent eligibility criteria for IGNDPS under the NSAP guidelines only provides assistance only to individuals with an 80% or higher disability level which arbitrarily excludes many individuals with significant disabilities who do not meet the severe classification but still struggle with daily survival, employment and medical needs. Moreover, the restriction directly contradicts the Rights of Persons with Disabilities Act, 2016[160], which defines persons with benchmark disabilities as those with a 40% disability or more.

Therefore, there is an urgent need to review the NSAP guidelines to reflect current demographic realities and economic conditions. The framework must be updated to respond to rising population demands, account for increasing economic vulnerability, and align eligibility criteria with contemporary laws and social policy frameworks.

[160] Government of India. (2016). The Rights of Persons with Disabilities Act, 2016 (Act No. 49 of 2016). Gazette of India. https://www.indiacode.nic.in/bitstream/123456789/15939/1/the_rights_of_persons_with_disabilities_act%2C_2016.pdf

Digital Exclusions

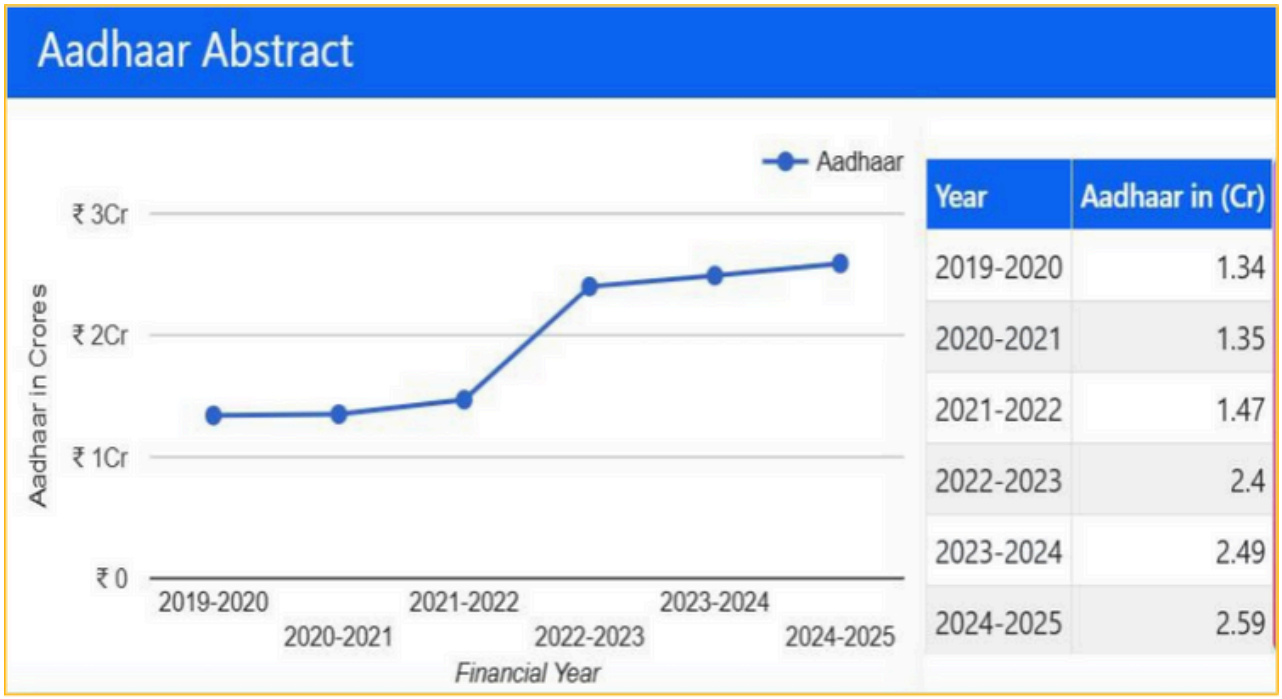
Across welfare schemes in India, the Indian state's growing reliance on techno- governance has given rise to newer forms of digital exclusion. The shifting towards technology driven welfare, including in other welfare schemes including MGNREGA and PDS, has created barriers in access and delivery for the most marginalised.The NSAP, already burdened with structural exclusions, has not been spared from these digital processes either. The introduction of digital systems such as direct bank transfers (DBT), biometric failures/mismatch, Aadhar mismatches, and opaque verifications systems have only added newer challenges.

Aadhar-Based Exclusions:

One of the issues arising from the DBT system is the complex and often error-prone process of linking beneficiaries' bank accounts with their Aadhaar numbers, and more recently, with the National Payments Corporation of India (NPCI) mapper. While these linkages are promoted as essential for ensuring efficiency and reducing leakages, they have instead introduced new forms of exclusion that disproportionately impact the poor, elderly, and persons with disabilities.

- **Aadhar:** Aadhaar-related exclusions are widespread and persistent, taking multiple forms such as biometric authentication failures, incorrect linkages, and data entry discrepancies. Although the Supreme Court has ruled that Aadhaar cannot be made mandatory for accessing welfare benefits - several states continue to require it for pension disbursement, thereby erecting additional barriers. Elderly individuals and persons with disabilities are particularly affected, as they often face difficulties in completing biometric authentication due to failed fingerprints or the unavailability of iris scanners. These challenges delay or block their ability to verify or update Aadhaar details, ultimately preventing timely access to their entitlements.

- **NPCI Mapper:** The National Payments Corporation of India(NPCI) mapping system is a critical but often overlooked component of Aadhaar-based DBT. It requires the linking of a beneficiary's Aadhaar number to their bank account through the NPCI mapper, to enable them to access government benefits including pensions. However, this process has become another source of exclusion. Even when Aadhaar is correctly linked to a beneficiary's bank account, payments can still be blocked if the account is not properly seeded in the NPCI mapper, which is a separate, technical step required for DBT transactions. Not all Aadhaar-linked accounts are mapped on the NPCI platform, and an even smaller number are correctly updated, leaving many eligible individuals without access to their approved benefits. Currently, of the 2.9 crore beneficiaries, 81.25% of beneficiaries have verified their Aadhaar, but only 40.35% of the total beneficiaries are linked on the NPCI mapper, which is only half of the verified Aadhaar cards. This gap puts lakhs of individuals at risk of being excluded from receiving their benefits, despite meeting all other eligibility criteria.



Year	Aadhaar in (Cr)
2019-2020	1.34
2020-2021	1.35
2021-2022	1.47
2022-2023	2.4
2023-2024	2.49
2024-2025	2.59

Source: NSAP Database[151]

Added Layers of Digitalisation:

Increasing layers of digitalisation, both at the central and state levels have contributed significantly to exclusions from pension schemes under NSAP. As states implement their own digital platforms, such as Haryana's Family Identity Data Repository and Rajasthan's RajSSP portal, discrepancies between state and central databases have become more common. These parallel systems often fail to synchronise effectively, resulting in errors such as incorrect gender entries, misspelled names, or missing personal details. Such mismatches in digitised records have led to the wrongful disqualification of many eligible beneficiaries. Rectifying these errors is typically a time-consuming and opaque process, further compounding the exclusion of vulnerable individuals from accessing their entitlements. Rather than streamlining welfare delivery, the uncoordinated digitalisation of records has introduced new bureaucratic hurdles and deepened the risk of administrative denial.

Disability Related Digital Exclusions:

Persons with disabilities are encountering significant digital barriers in accessing pension benefits, primarily due to the mandatory integration of the Unique Disability ID (UDID) system into welfare delivery. Since April 1, 2023, the central government has required a UDID number or enrollment ID to access benefits under 17 centrally supported schemes, including scholarships, health insurance programmes and NSAP . While this move aims to streamline processes and reduce paperwork, it has inadvertently led to exclusions.

In Rajasthan, the inability to register new applications for disability pensions stems from a data-sharing impasse between central and state systems. Previously, disability certificates were issued offline, but the shift to online systems like the central UDID portal and state-managed Jan Aadhaar has resulted in incompatibility issues. Since March 2024, new applications have been blocked because the Central Government has withheld API access

[151] Ministry of Rural Development. National Social Assistance Programme (NSAP) Government of India. https://nsap.nic.in/

required to sync disability data with state systems.[262] Furthermore, biometric authentication failures prevent many disabled individuals from completing eKYC processes, leaving them excluded from vital welfare benefits. Similarly in West Bengal, the transfer of data from the state portal to the central portal for UDID has left many new applicants.

The increasing digitisation of welfare schemes, while often projected as a tool for transparency and efficiency, has instead introduced opacity and untraceable decision-making. This problem is further made worse due to the lack of coordination and accountability among the various departments that are responsible for the pension delivery system. As a result, grievance redress mechanisms are weak or entirely absent. Most pension schemes do not provide a clearly defined or accessible route for resolving issues and complaint systems are often dysfunctional or unresponsive. When beneficiaries try to approach local officials or other grievance redress mechanisms, they are put into an endless bureaucratic loop. Even where accountability frameworks exist on paper, they are rarely implemented. Social audits, for instance, are mandated under several welfare schemes, including NSAP, but are either not conducted or lack follow up action. In the absence of any legal protections, there are no enforcement mechanisms to implement recommendations or hold officials accountable for violations.

Conclusion

The NSAP was conceived as an inclusionary program, but its current implementation reveals a fundamental contradiction in policymakers' approach. Through fiscal and policy constraints, the scheme falls flat and fails to meet its own welfare objectives. The lack of legislative backing reduces NSAP to merely a centrally sponsored scheme rather than a justiciable right, creating a policy vacuum where governments face no legal obligation to expand coverage or index benefits to inflation. Meanwhile, the state continues to abdicate its responsibility toward the country's most vulnerable populations. A statutory framework, like Rajasthan's Minimum Guaranteed Income Act (2023), could transform social security into an enforceable right, ensuring universal coverage for the elderly, persons with disabilities, and widows. Civil society has long demanded that pensions be pegged to at least half of the national minimum wage and inflation-adjusted to prevent erosion of their value. Yet, without such reforms, NSAP remains exclusionary by design, failing to reach those it claims to serve.

[262] Pensions and Digital Exclusions in Rajasthan, Mazdoor Kisan Shakti Sangathan and Pension Parishad

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State of Finance in India Report 20 24

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The **State of Finance in India Report** is a first of its kind that expands the domain of finance and economics beyond the confines of ivory tower experts. It invites writings from a cross section of academics, policy makers, activists, social practitioners and of course eminent economists who engage with questions from ground. Given that finance and money touches and shapes our lives in more ways than one, this ensemble of authorship gives the report a certain multidimensional character that allows us to explore the concerns of the day in a much broader as also deeper sense. Wearing a critical, alternative and bottom up lens while looking at finance and economy, the compilation stands out as it gives us an opportunity to critique the mainstream or dominant view in a language and form that is accessible to a larger audience. The report is a result of the combined efforts of Centre for Financial Accountability, the Economic Research Foundation and Focus on Global South. The editorial board comprises CP Chandrashekhar, Jayati Ghosh, Shalmali Guttal, Joe Athialy and Anirban Bhattacharya.

State of Finance 2024. The third edition of the State of Finance in India report examines the rise of India's digital economy and its far-reaching implications. From telecom liberalisation and spectrum auctions to Aadhaar, UPI, and India Stack, digital infrastructure has reshaped markets, services, and work, driving growth in fintech, e-commerce, healthtech, and digital labour platforms. While these shifts have expanded access and innovation, they also deepen inequalities, expose vulnerabilities, and raise concerns over regulation, worker rights, privacy, and democratic freedoms. The report underscores that India's digital transformation brings both opportunities and risks, demanding a careful balance between harnessing its benefits and addressing its disruptive consequences.

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