

Digital Welfare Governance: Evaluating the Impact of the JAM Trinity and Direct Benefit Transfer (DBT) Reforms in India

Dr. Amita Sharma
Assistant Professor
Army Institute of Law Mohali

Abstract

India has moved from a disjointed, paper-based welfare system to a centralized, data-driven digital welfare state what is termed 'new welfarism'. This Paradigm Uses Jan Dhan-Aadhaar-Mobile (JAM) Trinity and Direct Benefit Transfer (DBT) Platform to Remove Middlemen and Reduce Leakages. This study examines the achievements and structural risks of this digitized framework guided by transaction cost economics, the Wilson-Lowy matrix and the integrated welfare empowerment model (IWEM). We Empirically Analyze Subnational Financial Inclusion-Growth Links, Over USD 20 Billion Cumulative Savings, and Significant Increases in Technical Efficiencies of Public Sector Banks. Meanwhile, we look at socio-technical disruptions like biometric authentication failures, online literacy gaps, and cash-out deficits. We end with strategic recommendations for multi-modal overrides and local grievance systems that balance administrative efficiency with social equity.

Keywords: New Welfarism, JAM Trinity, Direct Benefit Transfer (DBT), Public Value Theory, Transaction Cost Economics, Digital Welfare State.

1. Introduction

Post independence India faced constant administrative frictions in welfare delivery with process driven, paper based, opaque systems (Sinha, 2024). Bureaucratic delays, pilferage and duplicate 'ghost' beneficiaries greatly eroded public trust (Gupta and Pal, 2020; Masiero and Prakash, 2020). The leakage was so endemic that in the 1980s, Prime Minister Rajiv Gandhi famously said that only 15 paise of every rupee allocated for welfare actually reached the intended recipients (Sinha, 2024). These administrative leakages and delays were estimated to create a fiscal gap equivalent to about 2% of India's annual Gross Domestic Product (GDP) by empirical studies (Gupta and Pal, 2020; Saini et al., 2017).

This porous apparatus was subjected to reforms by the government. These included a shift toward targeted welfare in 1995 with the National Social Assistance Program (NSAP) and rights-based safety nets in the 2000s such as the Mahatma Gandhi National Rural Employment Guaranty Act (MGNREGA) of 2005 and the National Food Security Act (NFSA) of 2013 (Sinha, 2024). Despite the large scale of these programs, they were characterized by massive transaction costs and leakages, as the distribution of benefits still relied on long intermediary supply chains and local administrative gatekeepers (Saini et al., 2017).

80	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

Under the administration of Narendra Modi, there was a structural and ideological shift toward ‘New Welfarism’, in the mid-2010s (Sinha, 2024). Under this model, the traditional focus on public services has been supplemented by direct provision of basic, tangible essentials, including universal banking access, subsidized cooking gas, sanitation, rural housing, household electricity, piped water and direct cash transfers (Sinha, 2024).

Essentially, New Welfarism is the use of digital public infrastructure (DPI) to create direct government-to-citizen (G2C) channels (Sharma et al., 2023). This began in January 2013 with the roll out of the Direct Benefit Transfer (DBT) platform (Gupta and Pal, 2020). The DBT mission was initially piloted in 27 schemes in 43 districts and was directly shifted to the Cabinet Secretariat in September 2015 for centralized monitoring (Gupta and Pal, 2020; Sharma et al., 2023). This paper reviews the DBT system and its technological enabler, Jan Dhan-Aadhaar-Mobile (JAM) trinity, by studying theoretical frameworks, empirical results and socio-technical risks.

2. The Architectural Foundations of the JAM Trinity

The operational engine of the digital welfare state in India is the JAM trinity, a synthesis of financial inclusion, biometric identity, and mobile telecommunications into a single transaction network (Saini et al., 2017). Together these three platforms help the state in re-engineering the existing public service processes and promoting cashless G2C interactions (Sharma et al., 2023).

2.1 Pradhan Mantri Jan Dhan Yojana (PMJDY)

The ‘J’ of the trinity stands for PMJDY, a huge financial inclusion campaign launched on 28 August 2014 to bring the unbanked into the formal financial system (Ray et al., 2022). Before 2014, India had only 58.7% of households with formal bank accounts, which meant that almost half of the population was dependent on informal and exploitative moneylenders (Ray et al., 2022). As of March 2022, more than 450 million PMJDY accounts had been opened, of which women owned 55% and rural residents accounted for 67% (Ray et al., 2022).

2.2 Aadhaar (UIDAI)

Aadhaar, the ‘A’ of the trinity, is a fundamental biometric identity system, established under the UIDAI in 2009 (Bhatia and Bhabha, 2017). This links demographic information to unique biometrics (ten fingerprints, two irises and a photograph) to create a unique 12 digit ID (Bhatia and Bhabha, 2017). Aadhaar provides real-time authentication through an API which simply sends back a ‘yes’ or ‘no’ response to verify identity during a transaction (Mukhopadhyay et al., 2019). This modular architecture enables public and private complementors to build services around the identity core (Mukhopadhyay et al., 2019). It covered 99% of all Indian adults in August 2017 (Mukhopadhyay et al., 2019).

2.3 Telecommunications infrastructure and mobile coverage

The ‘M’ of the trinity is mobile connectivity that facilitates G2C service delivery (Ghosh, 2017). Low data prices (averaging USD 0.09/GB) and a large wireless subscriber base of over 1.15 billion have

81	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

enabled m-governance for the masses through mass mobile connectivity (Saini et al., 2017). Mobile phones serve as critical G2C terminals that provide real-time transaction alerts, OTP authentications, and mobile money transfers (Sharma et al., 2023).

2.4 Integration engine: PFMS & APB

The Public Financial Management System (PFMS), a centralized online transaction portal set up under the Ministry of Finance, has integrated these platforms (Gupta and Pal, 2020; Saini et al., 2017). Line Ministries digitize beneficiary databases, seed them with Aadhaar numbers and upload them to PFMS for de-duplication (Saini et al., 2017). Upon verification, the PFMS generates electronic payment files that are sent by the National Payments Corporation of India (NPCI) through the Aadhaar Payment Bridge (APB) to automatically match payments with beneficiaries' bank accounts, eliminating local discretion (Saini et al., 2017; Mukhopadhyay et al., 2019).

3. Theoretical Frameworks of Digital Welfare Governance

The profound implications of this digital transformation are studied by scholars of public administration and political economy from different theoretical perspectives: Transaction Cost Economics, the Wilson-Low policy matrix, the Integrated Welfare Empowerment Model (IWEM) and critical theories of administrative panopticism.

3.1 Transaction Cost Economics and Poverty Traps

From an institutionalist perspective, developing economies are often stuck in a “low-level equilibrium” of high transaction costs and weak contract enforcement (Kanungo and Gupta, 2021). Historical evidence suggests that high informational asymmetry between the central government and local disbursing agents (Barnwal, 2015) allowed local intermediaries to divert resources and misreport transactions.

The JAM trinity was a concerted intervention of a ‘big push’ that made transaction costs irreversibly low (Kanungo and Gupta, 2021). The centralization of biometric records and banking access ended the cumbersome ex-ante verification and created digital paper trails that changed contract enforcement (Barnwal, 2015; Kanungo and Gupta, 2021).

3.2 The Wilson-Low Matrix and Politics of Entrepreneurship

Public choice models enable the classification of policy decisions according to the degree of concentration or diffusion of perceived costs and benefits. Before digital welfare in India, the nature of welfare was ‘client politics’ where rent-seeking benefits from subsidy diversions were concentrated and captured by powerful local intermediaries (dealers, shop owners and local officials) whereas the fiscal costs were highly diffused over taxpayers and citizens who were eligible but excluded.

The way to dismantle this clientelistic apparatus was “entrepreneurial politics” which pushed the costs onto the small group of rent-seeking intermediaries while spreading the benefits of financial

82	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

inclusion widely (Sinha, 2024). Supported by strong political backing, policy entrepreneurs were able to break through bureaucratic resistance and replace physical, dealer-mediated distribution chains with direct Aadhaar-linked cash transfers (Sinha, 2024).

3.3 Integrated Welfare Empowerment Model (IWEM)

Sinha (2024) developed the Integrated Welfare Empowerment Model (IWEM) to theorize digital welfarism beyond the retraction of the state. In synthesis with Amartya Sen's Capability Approach, IWEM argues that New Welfarism in India is a state-led, capability-enhancing mechanism (Sinha, 2024). The direct provision of basic necessities (toilets, clean water, cooking gas) enhances the capabilities of citizens, and ensures dignity, speed and precision in delivery (Sinha, 2024).

In addition, IWEM integrates human capital theory, showing that state-led investments in hygiene, clean water, and agricultural assistance generate long-term developmental dividends, including reductions in childhood stunting, improvements in cognitive outcomes, and increases in labor productivity across the nation (Sinha, 2024).

3.4 Administrative Panopticism and Responsibility Retention Capacity (RRC)

Critical public policy scholars, however, warn that biometric identification systems are emblematic of a shift toward 'administrative panopticism' – the state's pursuit of centralized 'legibility' and control over its citizens (Bhatia and Bhabha, 2017). This change creates an extremely asymmetric power structure, providing central authorities with an unprecedented level of surveillance capacity over citizen data (Masiero and Prakash, 2020).

This technocratic shift has important implications for street-level bureaucracy and public accountability (Masiero and Prakash, 2020). Automation limits the range of discretion on the front line. Discretion has traditionally been a source of corruption but it also provided humanistic flexibility and local adaptability when resolving value conflicts (Masiero and Prakash, 2020). Automated platforms like the PFMS and APB block local overrides and make accountability highly diffused. Administrative mistakes are re-branded as system malfunctions and citizens are essentially transformed from political subjects with constitutional rights into data subjects governed by automated algorithms (Masiero and Prakash, 2020).

4. Empirical Evaluation of the DBT and JAM Reforms

India's digital welfare governance has multiple empirical implications that include savings in public finance, suppression of black markets, sub-national economic growth, and efficiencies in public sector banking.

4.1 Fiscal Savings and De-duplication Wins

The main administrative rationale for the DBT rollout was the curtailment of revenue leakage (Saini et al., 2017). According to consolidated data released by the DBT Mission, by December 2019, the cumulative savings achieved by the Government of India through G2C digitization and the

83	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

elimination of duplicate, non-existent, or ineligible beneficiaries reached an astronomical USD 20.3 billion (approximately INR 1.4 trillion) (Gupta and Pal, 2020). These cumulative savings were highly concentrated in the Ministry of Petroleum & Natural Gas (around USD 8.5 billion or INR 59,599 crore), the Department of Food and Public Distribution (around USD 6.8 billion or INR 47,633 crore) and the Department of Rural Development under MGNREGA (around USD 3.05 billion or INR 21,306 crore), and significant recoveries in fertilizer subsidies (around USD 1.5 billion or INR 10,000 crore) and other welfare departments (Gupta and Pal, 2020). These fiscal savings were achieved through extensive data de-duplication efforts (Gupta and Pal, 2020). Line ministries could weed out 42.3 million fake or duplicate domestic LPG connections by seeding Aadhaar numbers into digitized databases, and the Department of Food and Public Distribution could retrieve and delete 29.8 million fraudulent or duplicate ration cards (Gupta and Pal, 2020). Under MGNREGA, about 10% of the wage bill was saved by removing ineligible or duplicate bank accounts (Gupta and Pal, 2020).

4.2. Killing Black Markets: Econometric Evidence from Fuel Subsidies

To determine whether these fiscal savings constitute a genuine decrease in corruption, rather than a simple exclusion, Barnwal (2015) performed an intensive econometric study of India's Direct Benefit Transfer for LPG (DBTL or PAHAL) scheme. Under the traditional subsidy system, domestic LPG cylinders were sold at highly subsidized prices, while commercial LPG was taxed, leaving an enormous arbitrage gap of nearly 50 per cent, which was exploited by a large black market (Barnwal, 2015).

Barnwal (2015) used the phased roll-out of the DBTL policy across districts in 2013 and the unexpected temporary termination of the policy in March 2014 as two separate quasi-experiments and applied a difference-in-differences empirical strategy to a dataset of 23 million fuel purchase transactions. After the direct transfer of subsidy cash to the bank accounts of the households and the requirement to purchase LPG at the point of sale at full market prices, the domestic fuel purchase decreased by 11% to 14% (Barnwal, 2015). Barnwal showed that the decline was driven by a decrease in black-market diversion. The removal of subsidized fuel capped the black-market supply and led to black-market prices skyrocketing, which encouraged commercial firms to buy formal and tax-compliant fuel (Barnwal, 2015).

4.3 Dynamic Panel Estimation of Financial Inclusion and Economic Growth

In addition to plugging specific leakages, the financial inclusion drive under the PMJDY was expected to promote subnational economic growth through multiplier effects (Singh and Singh, 2021). Singh and Singh (2021) tested this financial inclusion-growth nexus by developing a multidimensional Financial Inclusion Index (FII) for 25 major Indian states from 2011 to 2016 in three core dimensions of penetration, availability and usage. Employing a bootstrap corrected fixed effects estimation to overcome the problems of endogeneity, small sample size and dynamic panel bias, the econometric model revealed a positive and statistically significant relationship between the composite FII and Gross State Domestic Product (GSDP) growth (Singh and Singh, 2021).

Interestingly, the intercept dummies for the launch of PMJDY in 2014 were statistically insignificant but the interaction terms were positive and significant (Singh and Singh, 2021). This demonstrates that while PMJDY marginally increased the rate of economic growth across the states, it did not alter the level of prosperity across states in the immediate term. This is probably due to a high rate of account dormancy and low level of digital usage among the newly banked populations (Singh and Singh, 2021; Maity and Sahu, 2020).

4.4 Efficiency of Public Sector Banks after PMJDY

In India, commercial banks, particularly public sector banks (PSBs), are the main channel for financial inclusion and G2C direct benefit transfers (Ghosh, 2017). The financial strength and technical efficiency of these banks are crucial for the sustainability of the system. The opening of hundreds of millions of zero balance accounts under PMJDY imposed huge administrative and technical burden on PSBs (Maity and Sahu, 2020). To evaluate the effect of this campaign on the banking sector, Maity and Sahu (2020) performed a Data Envelopment Analysis (DEA) to compute the technical efficiency (TE) of all major PSBs, using the supply-side parameters of financial inclusion as input variables and the demand-side outcomes as output variables. The results revealed that the overall technical efficiency (OTE) of public sector banks under CCR model increased significantly from an average value of 85.87% before PMJDY to an average value of 91.75% after PMJDY (Maity and Sahu, 2020). The sharp rise in technical efficiency suggests that the large influx of deposit accounts and public welfare funds channeled through G2C channels under PMJDY offered a fillip to public sector banks to augment their deposit bases and scale up credit disbursement, thus improving financial robustness (Maity and Sahu, 2020).

4.5 DBT Implementation Differences across Subnational Units

Despite impressive national-level indicators, a more granular analysis of DBT implementation in Indian states reveals deep subnational disparities driven by regional differences in banking infrastructure, online literacy, and local political support (Sharma et al., 2023). The central government developed a DBT Assessment Framework, which ranks states on a scale of 100 points based on transaction speed, de-duplication rates, and database seeding accuracy, to measure this variation (Sharma et al., 2023). Using this framework, some performance differences are seen. Haryana is the highest with a performance score of 88.8 per cent, followed by Uttar Pradesh at 85.2 per cent. Jammu & Kashmir and Ladakh are moderate with 68.3 per cent, Odisha is in the medium category of performance (40-60 per cent) and West Bengal is the lowest at the bottom with only 13.2 per cent.

5. Socio-Technical Disruption and Digital Social Risks

The rapid top-down shift to digital welfare governance has not been without major socio-technical disruptions. While these digital platforms have succeeded in curbing administrative corruption, they have created entirely new forms of social risk, born out of digitalization itself (Masiero and Prakash,

85	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

2020). Critical scholars caution that the technocratic focus on fiscal efficiency has led to automatic barriers that hit the most vulnerable most (Masiero and Prakash, 2020).

5.1 Biometric authentication failures and exclusion errors

One major source of digital exclusion is the conditionality of G2C entitlements on successful real-time biometric authentication (Bhatia and Bhabha, 2017; Masiero and Prakash, 2020). To receive food rations under the Public Distribution System (PDS) or cash transfers under MGNREGA, beneficiaries need to provide their biometrics at a Point of Sale (PoS) device (Masiero and Prakash, 2020). But biometrics markers are not very stable. Manual and agricultural workers often wear fingerprints, and large elderly populations in rural areas suffer from iris deterioration due to cataracts (Bhatia and Bhabha, 2017). If a PoS device cannot authenticate biometrics due to physical markers or erratic telecom connectivity, the database logs an error and denies delivery (Masiero and Prakash, 2020).

Database errors and different spellings of names across different databases (like land records, bank details and Aadhar card) also affect successful payment validation (Sharma et al., 2023). Many transaction failures in the PM-KISAN agricultural support scheme are attributable to spelling discrepancies in legacy land records (Sharma et al., 2023). In a primary survey in East Godavari district, it was found that 51% of all eligible farmers who faced severe delays or did not receive their PM-KISAN benefits were excluded only due to spelling and authentication mismatches related to Aadhaar (Sharma et al., 2023).

5.2 Cash-Out Infrastructure Deficiencies and Transaction Failures

While the PFMS and APB facilitate G2P transfers to bank accounts, the physical withdrawal of cash continues to be a colossal barrier for rural populations (Sharma et al., 2023). Low density of brick-and-mortar bank branches and ATMs (Saini et al., 2017) has resulted in a huge shortage of banking infrastructure in rural India. To address this gap, RBI introduced the Business Correspondent (BC) or Bank Mitra model, enabling mobile agents with micro-ATMs to distribute cash in remote villages (Saini et al., 2017; Sharma et al., 2023). But this model is not robust. Dvara-CMIE Survey revealed that during the COVID-19 pandemic, almost 40% of all rural households that attempted to withdraw cash experienced severe failure of transactions (Sharma et al., 2023). These failures are categorized into three types: (1) Inaccessibility and Agent Misconduct, where agents charge unauthorized transaction fees; (2) Technical and Connectivity Failures at the point of sale; and (3) Account Dormancy, which refers to bank accounts opened under PMJDY that are inactive or frozen due to KYC holds (Sharma et al., 2023; Ray et al., 2022).

5.3 The Digital Gender Gap and Literacy

Widespread digital governance presupposes a baseline level of digital proficiency which does not exist in rural India (Sharma et al., 2023). Online literacy, or the ability to independently navigate digital technologies and payment portals is low, with only 38% of Indian households being digitally literate (Sharma et al., 2023). Newly banked poor citizens are highly dependent on family members

86	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License(CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

or bank agents which reestablishes opportunities for coercion and fraud (Ray et al., 2022). Moreover, direct transfers credited to the accounts of household male heads instead of female members are often diverted to non-essential consumption (Saini et al., 2017).

5.4 Administrative Panopticism and the Threat of Private Data

More broadly, the creation of the world's largest biometric identity database has occurred in a virtual legislative vacuum on civil liberties (Bhatia and Bhabha, 2017). The state can use Aadhaar seeding in bank accounts, telecom providers, tax records and healthcare platforms to build very detailed socio-economic profiles of individual citizens, which helps surveillance (Bhatia and Bhabha, 2017). Adding to this risk is the integration of private fintech firms and private telecom operators into the digital welfare ecosystem (Singh and Singh, 2024). Private actors, in the name of 'surveillance capitalism,' treat personal demographic and biometric data as raw behavioral material, exposing vulnerable populations to algorithmic profiling and commercial exploitation without strong legal structures for digital consent (Bhatia and Bhabha, 2017; Singh and Singh, 2024).

6. Strategic Pathways for Institutional Refinement

Systemic improvements in the Indian digital welfare state are necessary to address the structural tension between technocratic efficiency and democratic social safety. Our paper proposes four specific strategic strategies to realize a human-centric and equitable digital governance framework.

6.1 Multi-Modal Authentication Backups

Biometric authentication should never be a single point of failure for basic human entitlements (Masiero and Prakash, 2020). The UIDAI and implementing line ministries should make it mandatory to use multi-modal authentication protocols (Saini et al., 2017). In addition to the successful piloting in Andhra Pradesh, the system should provide other verification options in the first instance if fingerprint authentication is not possible due to worn ridges or friction of the device, for example, iris scans, mobile-linked OTPs, or secure, community-verified offline manual overrides (Saini et al., 2017). Failure to match biometrics successfully should never lead to denial of food, health care or other essential G2C transfers (Saini et al., 2017).

6.2 Enhancing RRC and Grievance Redressal at Local Level

The state must decentralize administrative authority (Kanungo and Gupta, 2021) to reestablish public accountability. The central government should permit disaggregation and delegate the authority of policy override to branch level retail banks, local block development officers and Panchayati Raj Institutions (PRIs) (Kanungo and Gupta, 2021). The government also needs to develop a centralized, real-time technology-driven grievance redressal system (Chakraborty and Seth, 2015). This should include a toll-free, multi-lingual IVR inquiry platform to facilitate illiterate and non-smartphone owning rural citizens to track their payments, register transactional complaints and get human-centric dispute resolutions (Chakraborty and Seth, 2015).

6.3 Scaling Up Universal Digital and Financial Literacy

87	ISSN2277-3630(online), Published by International Journal of Social Sciences & Interdisciplinary Research., under Volume: 13 Issue: 04 in April-2024 https://www.gejournal.net/index.php/IJSSIR
	Copyright (c) 2024 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CCBY). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/

To bridge the digital divide and promote increased citizen autonomy, the government should significantly speed up online literacy initiatives for the masses, scaling up programs like PMGDISHA. Saini et al. (2017) suggested that line ministries in association with local non-governmental organizations and self-help groups should organize recurring financial literacy camps in rural areas. The campaigns should aim to train rural women and marginalized groups to operate mobile banking wallets on their own, to understand transaction notifications and to protect themselves from financial fraud (Saini et al., 2017).

6.4 Enacting Strong Biometric Data Protection Laws

Finally, the state must enact and enforce strong biometric data protection legislation to protect citizens from the threats of administrative panopticism and surveillance capitalism (Bhatia and Bhabha, 2017). This legal framework should also clearly identify biometric data as immutable personal property, restrict the transfer of public welfare databases to private fintech and commercial telecom operators, institute robust digital consent procedures, and build in clear pathways for legal redress in cases of data breaches (Bhatia and Bhabha, 2017).

7. Conclusion

The digital welfare state in India, as exemplified in the JAM (Jan Dhan-Aadhaar-Mobile) trinity and the Direct Benefit Transfer (DBT) payment architecture, is a giant leap forward in state administrative capacity. The state has successfully bypassed the deeply ingrained clientelistic intermediary networks, eliminated tens of millions of fake accounts and achieved more than USD 20 billion in cumulative public savings by creating direct, biometric-enabled G2C channels (Gupta and Pal, 2020; Saini et al., 2017). But this technocratic shift is marked by a permanent socio-technical tension. The imposition of biometric conditionality on essential social safety nets has created new social risks in the digital era, as evidenced in authentication failures excluding the elderly and labor-intensive workers, deficiencies in rural cash-out infrastructure and technological literacy divides reinforcing gender inequalities (Masiero and Prakash, 2020; Saini et al., 2017). Furthermore, the absence of robust privacy legislation and the commercialization of public databases by private telecom and fintech companies raise serious concerns about administrative panopticism (Bhatia and Bhabha, 2017).

To reconcile these competing dynamics, India's future digital policy agenda needs to move away from a narrow techno-centric efficiency paradigm to a human-centric collaborative framework (Kanungo and Gupta, 2021). Mandatory multi-modal authentication overrides, delegation of override authority to block levels and PRIs and strict enforcement of data protection laws can achieve the successful balance of efficiency and social equity in India (Saini et al., 2017). Thus, the Indian DBT model can transform from a powerful tool for fiscal audit to a global benchmark for inclusive, rights-based and citizen-empowering digital governance.

References

1. Anand, A., Dimble, V., & Subramanian, A. (2020, December 22). New welfarism of India's right. *The Indian Express*.
2. Banerjee, S. (2015). *Aadhaar: Digital inclusion and public services in India*. World Bank Group.
3. Barnwal, P. (2015). *Curbing leakage in public programs with direct benefit transfers: Evidence from India's fuel subsidies and black markets* [Working paper]. Columbia University.
4. Bhatia, A., & Bhabha, J. (2017). India's Aadhaar scheme and the promise of inclusive social protection. *Oxford Development Studies*, 45(1), 64–79.
5. Chakraborty, D., & Seth, A. (2015). Building citizen engagement into the implementation of welfare schemes in rural India. In *Proceedings of the seventh international conference on information and communication technologies and development (ICTD)* (pp. 1–10).
6. Ghosh, S. (2017). Financial inclusion, biometric identification and mobile: Unlocking the JAM trinity. *International Journal of Development Issues*, 16(2), 190–213.
7. Gupta, R., & Pal, S. K. (2020). Effective inclusion of citizens through e-governance services: Case study of direct benefit transfer in India. In *Proceedings of the 13th international conference on theory and practice of electronic governance (ICEGOV 2020)* (pp. 787–790).
8. Joy, J. (2018). A critical analysis of direct benefit transfer in India. *Indian Journal of Economics and Development*, 6(8), 1–7.
9. Kanungo, R. P., & Gupta, S. (2021). Financial inclusion through digitalisation: Economic viability for the bottom of the pyramid (BOP) segment. *Technological Forecasting and Social Change*, 167, 120721.
10. Maity, S., & Sahu, T. N. (2020). Role of public sector banks towards financial inclusion during pre and post introduction of PMJDY: A study on efficiency review. *Rajagiri Management Journal*, 14(2), 95–105.
11. Masiero, S., & Prakash, A. (2020). ICT in social protection schemes: Deinstitutionalising subsidy-based welfare programmes. *Information Technology & People*, 33(4), 1255–1280.
12. Saini, S., Sharma, S., Gulati, A., Hussain, S., & von Braun, J. (2017). *Indian food and welfare schemes: Scope for digitization towards cash transfers* (ICRIER Working Paper No. 343). Indian Council for Research on International Economic Relations.
13. Sharma, P., Sharma, S., & Rani, B. (2023). Direct benefit transfer (DBT) in India: A strategic assessment of technology-driven welfare delivery. *Journal of Technology Management for Growing Economies*, 14(2), 39–51.
14. Singh, G., & Singh, S. (2021). Financial inclusion, Pradhan Mantri Jan Dhan Yojana scheme and economic growth: Evidence from Indian states. *Economic Notes*, 50(3), e12185.
15. Singh, J., & Singh, M. (2024). Accelerating financial inclusion of the urban poor: Role of innovative e-payment systems and JAM Trinity in alleviating poverty in India. *Global Business Review*, 1–21.

