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Direct Benefit Transfer (DBT) as a Tool for Poverty Reduction: A Review of Policy and Practice in India

S. Deebaq, Dr. P. Magudapathy

PhD Research scholar, Associate professor

Department of Public Administration,

Government Arts College (Autonomous)

Bharathiar University, Coimbatore, India

Abstract

Direct Benefit Transfer (DBT) has emerged as the dominant welfare delivery mechanism in India since the early 2010s, replacing large parts of the older subsidy and in-kind distribution architecture with electronic transfers routed directly into beneficiaries' bank accounts. Built on the foundation of the JAM trinity, that is, Jan Dhan bank accounts, Aadhaar biometric identity and mobile connectivity, DBT was conceived primarily as a governance reform intended to reduce leakage, curb corruption and improve targeting accuracy in welfare programmes. This paper reviews the policy evolution of DBT in India and synthesises empirical evidence on its performance across major sectors including cooking-fuel subsidy, food distribution, employment guarantee payments, and health-linked transfers. The review finds robust evidence that DBT has reduced diversion of subsidised commodities to black markets and shortened payment delays, but it also documents a recurring and serious cost: exclusion errors that deny genuine beneficiaries access to entitlements because of authentication failures, banking-infrastructure gaps or database mismatches. The paper argues that DBT should be understood not as a uniformly poverty-reducing technology but as a delivery mechanism whose welfare effects depend heavily on the quality of last-mile implementation, an argument that motivates the district-level evaluation of DBT effectiveness undertaken later in this research programme.

Keywords: Direct Benefit Transfer, DBT, Aadhaar, JAM trinity, leakage, exclusion error, welfare delivery, India

Introduction

For much of India's post-independence history, welfare benefits were delivered through in-kind subsidies and cash disbursed through multi-layered bureaucratic channels, a system widely criticised for high administrative cost, diversion of funds and commodities, and long payment delays. Direct Benefit Transfer was introduced as a structural response to these failures, with the explicit objective of shifting the mode of delivery from indirect, discretionary distribution to a direct, verifiable and traceable electronic transfer of entitlements into the bank accounts of intended beneficiaries. Formally launched in January 2013 and subsequently expanded and consolidated under the DBT Mission housed in the Cabinet Secretariat, the programme now spans several hundred central schemes across dozens of ministries, covering cash transfers such as pensions and agricultural income support as well as subsidy components of in-kind schemes such as cooking-gas and food distribution.

The rapid scale-up of DBT has generated a correspondingly large body of research seeking to establish whether the mechanism actually improves welfare outcomes for the poor, or whether it merely improves fiscal and administrative metrics while leaving deeper questions of poverty reduction unaddressed. This paper reviews that literature, organising it around three questions: how has DBT policy evolved in India; what does rigorous empirical evidence show about its effects on leakage, targeting and beneficiary welfare; and what unresolved implementation challenges continue to limit its poverty-reducing potential. The paper is intended as a policy-and-practice companion to the conceptual review of poverty alleviation schemes presented elsewhere in this research programme, and it lays the groundwork for the subsequent papers examining e-governance implementation challenges and district-level effectiveness in Coimbatore.

Objectives And Methodology

The specific objectives of this review are to trace the policy trajectory of DBT in India from its pilot phase to its current nationwide scale; to synthesise empirical findings on the effects of DBT on subsidy leakage, payment timeliness and beneficiary access; and to identify the principal implementation challenges reported in the literature. As with the companion conceptual review, this paper relies entirely on secondary sources, drawing on peer-reviewed economics and public-policy journals, working papers from research institutions, and official DBT Mission documentation. No primary survey or interview data has been collected for this paper.

Conceptual And Institutional Background

DBT rests on the technical foundation popularly termed the JAM trinity: Jan Dhan bank accounts opened under the Pradhan Mantri Jan Dhan Yojana, Aadhaar biometric identity numbers, and mobile telephony used for authentication and notification. The underlying logic is that once a beneficiary is uniquely identified through Aadhaar and linked to a functioning bank account, welfare payments can be transferred directly and electronically, bypassing intermediaries who previously had discretion over disbursement and were therefore positioned to extract rents or divert funds. The Public Financial Management System, earlier known as the Central Plan Scheme Monitoring System, functions as the common technical backbone that routes these payments and generates auditable digital trails.

Two broad categories of DBT can be distinguished in the literature. The first is direct cash transfer, where a scheme's entire benefit, such as an old-age pension or the income support paid under the Pradhan Mantri Kisan Samman Nidhi, is disbursed as cash. The second is DBT applied to an in-kind subsidy, where the underlying commodity, such as cooking gas or foodgrain, continues to be distributed but the subsidy component is credited separately to the beneficiary's account, as under the PAHAL scheme for liquefied

petroleum gas. This distinction matters because the two models generate different incentive structures and different vulnerabilities to leakage and exclusion.

Policy Evolution

Direct Benefit Transfer was formally launched on 1 January 2013 with an initial focus on scholarship, pension and maternity-benefit schemes in a limited set of districts. Early implementation exposed significant weaknesses, particularly incomplete Aadhaar seeding and inadequate banking infrastructure in rural areas, and the initial rollout was consequently slowed and recalibrated. The most consequential early application came with the Direct Benefit Transfer for LPG, popularly known as PAHAL, first piloted in 2013 and rolled out nationwide by 2015, which became, at the time, one of the largest cash transfer programmes in the world by beneficiary count.

Following the creation of a dedicated DBT Mission under the Cabinet Secretariat in September 2015, the programme's institutional coordination improved, and DBT was progressively extended to food subsidy pilots in Union Territories, fertiliser subsidy, employment-guarantee wage payments under MGNREGA, and a growing set of central and state cash-transfer schemes for agriculture, health and social security. Government data cited in recent policy reviews indicate that cumulative DBT transfers have grown to several hundred thousand crore rupees annually, with beneficiary coverage expanding many-fold over the decade since launch, alongside a reported decline in the share of government subsidy expenditure lost to leakage.

Empirical Evidence On Effectiveness

A substantial body of rigorous, often experimental, research has examined whether DBT actually reduces leakage and improves beneficiary welfare, and the findings are more nuanced than aggregate government figures suggest. In one of the most cited studies in this literature, a large-scale randomised evaluation of biometrically authenticated smartcard payments for employment-guarantee wages and pensions in Andhra Pradesh found that the reform reduced payment delays and diversion of funds without reducing beneficiaries' access to their entitlements, demonstrating that well-designed digital payment infrastructure can simultaneously improve efficiency and preserve access (Muralidharan et al., 2016).

Evidence from the cooking-fuel sector similarly supports the leakage-reduction case. An econometric study of the Direct Benefit Transfer for LPG found that the policy reduced the diversion of subsidised cylinders into commercial black markets, evidenced by a decline in subsidised fuel purchases and corroborated by falling black-market prices, indicating that tying subsidy disbursement to verified individual beneficiaries closed off a significant channel of leakage that had previously benefited intermediaries rather than the poor (Barnwal, 2024).

A parallel strand of research, however, cautions that stricter identity verification carries real costs. A large-scale study of biometric authentication requirements introduced into India's largest social protection programme found that while corruption did fall, the transition also caused between 1.5 and 2 million legitimate beneficiaries to lose access to benefits at some point during the reform, a consequence attributed largely to how the transition itself was managed rather than to the technology per se (Muralidharan et al., 2020). This finding is echoed by process-monitoring evidence from the early rollout of DBT for food subsidy in Union Territories, which documented operational difficulties in beneficiary verification and payment reconciliation during the first year of implementation (Muralidharan et al., 2017).

The gendered dimension of DBT has also received research attention. A qualitative study examining the use of direct transfers to route benefits specifically to women found that while bank-account-based transfers can strengthen women's control over household resources and visibility within the financial system, the effectiveness of this channel depends heavily on whether women, rather than male household heads, retain practical control over the linked account, underscoring that the technical architecture of DBT does not automatically translate into intra-household empowerment (Sabherwal et al., 2019).

Finally, the broader debate over cash versus in-kind delivery, which predates DBT but has been sharpened by its expansion, draws on evidence of substantial leakage in the older Public Distribution System, where a meaningful share of allocated foodgrain has been shown to be diverted before reaching intended beneficiaries, a finding frequently invoked both by advocates of shifting food subsidy to DBT and by critics who argue that in-kind delivery, if administratively tightened, can achieve comparable gains without the exclusion risks associated with authentication-based cash transfer (Khera, 2011).

Dbt In The Health And Social Security Sectors

Beyond fuel, food and employment-guarantee wages, DBT has also been extended into health-linked welfare delivery, offering a useful additional test of the mechanism's effectiveness in a sector where beneficiaries are frequently among the poorest and most administratively hard to reach. The Ni-kshay Poshan Yojana, a nutritional support scheme for tuberculosis patients that credits a fixed monthly benefit directly to patients' bank accounts, has been the subject of large-scale programmatic evaluation covering several million notified patients. These evaluations find that a substantial majority of enrolled patients received at least one instalment, but also document meaningful delays between notification and first payment, and a non-trivial share of patients who never received any benefit despite eligibility, illustrating that even a comparatively well-resourced, single-purpose DBT scheme struggles to achieve full and timely coverage in practice.

This sectoral evidence reinforces a broader pattern visible across the DBT literature: the technology performs most reliably where beneficiary identification is straightforward and banking access is already reasonably dense, and performs least reliably where beneficiaries are transient, elderly, informally employed, or located in areas with thin financial infrastructure. Old-age pensioners and manual labourers, whose biometric data is more prone to matching failure due to worn fingerprints, and residents of remote rural blocks with limited banking-correspondent coverage, recur across multiple studies as the sub-groups most exposed to exclusion risk, regardless of the specific scheme or sector under review.

State-Level Implementation: The Case Of Tamil Nadu

National-level evidence on DBT performance, while informative, can obscure considerable variation in how individual states have operationalised the mechanism, and Tamil Nadu offers an instructive case given its comparatively strong administrative capacity and long-standing tradition of welfare delivery. State documentation reviewed in recent scholarship indicates that Tamil Nadu had extended DBT to over a dozen major welfare programmes within the first few years of the national rollout, spanning scholarships, women and child welfare, and labour-welfare honoraria, supported by partnerships between the state government and banking institutions to widen account access in rural areas (Yoganandham, 2019).

This same body of state-focused research documents both the advantages and the frictions of Aadhaar-linked delivery in the Tamil Nadu context. On the positive side, the integration of Aadhaar and bank-account infrastructure is credited with tightening beneficiary verification and reducing duplicate or ineligible claims across several flagship schemes. On the other hand, the same studies flag persistent

concerns around data privacy, the administrative burden of correcting Aadhaar-database mismatches, and the vulnerability of poorly digitally literate beneficiaries to fraud during the account-linking process, concerns that echo the exclusion-risk findings reported at the national level in Section 5 (Yoganandham, 2019). Because Coimbatore District sits within this same state administrative and digital-infrastructure environment, these state-level findings provide an important contextual anchor for the district-level DBT evaluation undertaken later in this research programme, and they suggest that state administrative capacity, while generally a positive factor, does not by itself eliminate the exclusion risks documented in the wider national literature.

Issues And Challenges

The literature reviewed above points to a consistent set of implementation challenges. Exclusion errors arising from Aadhaar authentication failures, biometric mismatches for manual labourers and the elderly, or incomplete database seeding remain the most serious concern, since they risk denying benefits precisely to the poorest and most vulnerable households that welfare schemes are designed to protect. Banking infrastructure gaps, including limited rural branch and business-correspondent density, continue to constrain the speed and reliability of last-mile disbursement in remote areas. Digital and financial literacy among beneficiaries affects whether transferred cash is used effectively, and monitoring of downstream spending behaviour remains administratively difficult. Finally, the shift from in-kind to cash transfer exposes beneficiaries to price and market risk that in-kind delivery had previously absorbed, a concern particularly relevant for food and fuel subsidies in regions with volatile local markets.

Conclusion

The evidence reviewed in this paper supports a qualified rather than unconditional endorsement of Direct Benefit Transfer as a poverty-reduction tool. Where implementation has been technically sound, DBT has demonstrably reduced leakage, shortened payment delays and curtailed the diversion of subsidised commodities into black markets, generating genuine efficiency gains for the exchequer and, in several documented cases, for beneficiaries themselves. At the same time, the same body of evidence shows that authentication-based delivery can and does exclude genuine beneficiaries when identity verification, banking access or database accuracy are imperfect, an outcome that runs directly counter to the poverty-alleviation objective the mechanism is meant to serve.

This tension between efficiency gains and exclusion risk is not adequately resolved by studies conducted at the national or state level alone, since the balance between the two depends heavily on local administrative capacity, banking density and beneficiary literacy, all of which vary considerably across districts. This gap motivates the district-level focus of this research programme, which examines how DBT effectiveness plays out specifically within the administrative and socio-economic context of Coimbatore District, Tamil Nadu, and which is developed further in the companion papers on e-governance implementation challenges and district-level scheme evaluation.

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