



Direct Benefit Transfer (DBT) in India: A Strategic Assessment of Technology-Driven Welfare Delivery

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ABSTRACT

Background: The Direct Benefit Transfer (DBT) initiative in India has emerged as a pivotal reform in public welfare management by leveraging digital infrastructure to enhance the efficacy, transparency, and accountability of subsidies and benefit distribution.

Purpose: The purpose of this study is to evaluate the efficacy of DBT in improving welfare delivery, examine its evolution, enablers, and challenges, and propose strategic recommendations for its optimization.

Methods: A comprehensive literature review utilizing peer-reviewed articles and policy reports on direct benefit transfer (DBT) in India is conducted. The key findings are systematically synthesized, and public value theory is applied to evaluate DBT's impact on public service delivery. Subsequently, a SWOT analysis is employed to examine the program's strengths, weaknesses, opportunities, and threats, providing managerial insights for enhancing public welfare through DBT in India.

Results: DBT has significantly enhanced transparency, reduced fraudulent activities, and promoted financial inclusion through the JAM trinity. However, exclusion errors, limited rural banking infrastructure, and digital literacy barriers hinder its broader impact. Strategic opportunities exist in the implementation of emerging technologies and public-private collaborations to expand DBT's reach and efficacy.

Conclusion: DBT exerts a substantial influence on the transformation of public welfare in India through the promotion of social equity and economic empowerment. The results suggest policy actions to optimize the program's effectiveness, including improving the process of identifying beneficiaries, broadening initiatives to enhance digital literacy, and utilizing cutting-edge technologies such as artificial intelligence and blockchain to achieve superior welfare outcomes.



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1. Introduction

The Direct Benefit Transfer (DBT) program was introduced in India on January 1, 2013, with the objective of enhancing efficiency, transparency, and accountability in public service delivery. Inspired by the global New Public Management (NPM) trends, DBT was introduced as a part of India's broader public administration reform agenda aimed at modernizing and streamlining the welfare delivery system, marking a strategic shift towards data-driven governance in the public sector. By integrating digital management tools, DBT has been able to successfully address critical challenges such as inefficiencies, fraudulent activities, and intermediary-induced delays in the welfare delivery process. At the core of DBT's success is the JAM Trinity—Jan

Dhan bank accounts, Aadhaar identification, and mobile technology—which enables the direct transfer of benefits to citizens, minimizing the role of intermediaries and reducing the risk of fraud (Dar *et al.*, 2022). This innovative framework has transformed how public welfare services are administered, particularly in rural and economically disadvantaged regions, by streamlining administrative processes and improving transparency in the distribution of funds (Joy, 2018).

The introduction of DBT was motivated by the need to address the inefficiencies, leakages, and bureaucratic delays that plagued traditional welfare distribution methods. By re-engineering existing processes, DBT has enabled the government to channel resources directly to

beneficiaries with greater precision and speed. This digital transformation has proven to be particularly crucial in developing economies like India, where ensuring timely and equitable distribution of subsidies plays a vital role in poverty alleviation and inclusive growth (Gupta & Pal, 2020). The program's success in targeted cash transfers has earned commendation from global organizations such as the World Bank and International Monetary Fund (IMF) for its role in addressing income inequality and fostering socioeconomic development (World Bank, 2020).

Initially, the DBT Mission was overseen by the Planning Commission and later transferred to the Department of Expenditure, reflecting its strategic importance within India's public administration framework. Commencing with implementation in 43 districts during the first phase, the program expanded to 78 additional districts, encompassing 27 schemes targeting key demographic groups, including women, children, students, and laborers. By 2014, DBT had rapidly scaled nationwide, with programs such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) introduced under its framework in over 300 districts (Ministry of Information & Broadcasting, 2022).

The impact of DBT has been far-reaching, transforming the way welfare services are delivered to millions of beneficiaries, particularly the marginalized and economically vulnerable sections of society, such as farmers, the elderly, and women. By enhancing financial inclusion, DBT has integrated these populations into the formal banking system, allowing them to access savings and credit services, which in turn improves their economic stability and resilience (Sabherwal *et al.*, 2019; Varshney *et al.*, 2021). The success of DBT in mitigating poverty and inequality has been widely recognized, and its scalability and adaptability make it a relevant model for other developing economies facing similar challenges.

DBT has also played a critical role during times of crisis, such as the COVID-19 pandemic, when the Indian government was able to rapidly distribute financial aid to millions of affected citizens, highlighting the system's resilience and efficiency (PIB Delhi, 2021). Through the incorporation of technological innovations such as the Public Finance Management System (PFMS), the Aadhaar-enabled Payment System, and the Unified Payment Interface (UPI), the program has collectively established a robust technology-aided infrastructure that enhances operational effectiveness by facilitating interoperability, expeditious and efficient monetary transfers, and direct subsidy disbursements to rural and urban households.

Flagship programs such as the LPG PAHAL scheme and PM Awas Yojana showcase DBT's ability to operate at scale, within both urban and rural contexts, with PAHAL

alone serving over 150 million beneficiaries and establishing global benchmarks for large-scale direct subsidy transfers (Chelliah & Arunkumar, 2018). Despite accounting for a small fraction of the government's total subsidy expenditure, PAHAL's strategic importance lies in its pioneering role in subsidy distribution via DBT, heralding a paradigm shift in benefit transfer to low-income households. Furthermore, the utilization of DBT architecture in various scholarship programs and initiatives, such as the National Social Assistance Programme, underscores its versatility in providing social security across diverse sectors.

This paper aims to analyze DBT from a managerial perspective, applying Public Value Theory (Moore, 1995) to explore how the initiative has contributed to public welfare by fostering efficiency, equity, and transparency in service delivery. By conducting a SWOT analysis, the paper will assess DBT's strengths, weaknesses, opportunities, and threats and provide policy recommendations for further enhancing its operational framework. Through a comprehensive examination of DBT's evolution and its application of digital governance, this study offers a valuable model for other developing economies seeking to leverage technology for better governance and welfare management.

The objectives of this study are to analyze the evolution and current status of Direct Benefit Transfer (DBT) in India with respect to its design, implementation, and efficacy in achieving policy objectives; to explore DBT's impact from a management and technological standpoint, specifically utilizing public value theory to assess how DBT has revolutionized welfare distribution systems; to conduct a SWOT analysis of DBT for strategic insights into the program's effective implementation; and to formulate strategic recommendations that address these challenges, with the objective of enhancing DBT's efficacy within public welfare frameworks.

2. Research Methodology

A literature review methodology was employed to explore and synthesize academic perspectives on DBT's implementation and impact in India. Comprehensive database searches were conducted using platforms like PubMed, Google Scholar, and JSTOR, with key terms such as "Direct Benefit Transfer," "public welfare management," and "India." This review prioritized peer-reviewed articles and studies published up to 2022 that provided empirical evidence, theoretical insights, or critical evaluations of DBT.

Selection Criteria: Articles were selected based on their relevance to the study's objectives, with a focus on the strategic and operational aspects of DBT, including its implementation, implications, and challenges in India. Sources were included if they offered empirical findings,

strategic frameworks, or substantial policy insights related to the DBT framework within Indian public administration.

Data Extraction: Key information regarding the study methodologies, findings, and strategic implications of DBT was systematically extracted. This process involved independent verification by two researchers to ensure data reliability, with an emphasis on the management aspects that influence DBT's effectiveness and scalability.

Synthesis of Findings: The collected data were synthesized to identify recurring themes and strategic patterns in DBT implementation, focusing on the integration of digital management systems, policy implications, and operational challenges. This synthesis aims to provide a strategic framework for understanding the broader management implications of DBT within India's welfare landscape.

3. Evolution of DBT in India

Since its inception, Direct Benefit Transfer (DBT) has evolved as a cornerstone of public management in India, reflecting the government's strategic use of digital transformation to reform welfare delivery. Reflecting a dynamic interplay of policy initiatives, technological advancements, and socio-economic imperatives, the program has undergone a remarkable evolution, which can be traced back to the early 2000s, when the government initiated efforts to reform welfare delivery mechanisms and curb leakages in subsidy disbursal systems. However, DBT only gained significant traction as a key instrument for enhancing transparency, efficiency, and accountability in the mid-2010s, driven by a robust policy framework that leveraged digital infrastructure to streamline the distribution of subsidies and benefits directly to citizens (Iyer, 2022). The trajectory of DBT implementation in India can be delineated into a series of strategic phases, each marked by distinct policy refinement and technological innovation.

- The initial phase witnessed the piloting of DBT initiatives in select welfare schemes aimed at evaluating the feasibility and efficacy of direct subsidy transfers to beneficiaries' bank accounts (Press Information Bureau, 2015a). A notable program during this phase was the Aadhaar-linked LPG subsidy transfer scheme launched in 2013, which demonstrated the potential of DBT to mitigate leakages and enhance the targeting of subsidies.
- Following the success of these pilots, DBT was scaled to a wider range of welfare programs propelled by the integration of digital systems into governance. The implementation of the Aadhaar-enabled Payment System (AePS) and the Unified Payment Interface

(UPI) facilitated the direct transfer of subsidies to beneficiaries' bank accounts, addressing challenges related to last-mile connectivity and financial access (Ministry of Finance, 2016; National Payments Corporation of India, n.d.). Further, DBT's strategic integration with other databases, such as those under the National Social Assistance Programme (NSAP), exemplifies its versatility in targeting vulnerable populations.

- In the next phase, policy adjustments and course corrections were made in response to emerging challenges and real-time feedback from stakeholders. Efforts to address concerns related to exclusion errors, authentication failures, and privacy issues resulted in the implementation of safeguards and enhancements in the DBT architecture. Furthermore, initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY) have supported DBT's expansion by facilitating financial inclusion and increasing financial and digital literacy among marginalized groups, thereby broadening DBT's scope and impact.
- Looking ahead, as India progresses in its digital transformation, DBT is poised to evolve further in response to emerging technological advancements and socioeconomic shifts. Such adaptations will be crucial, as DBT continues to shape India's welfare ecosystem, necessitating a collaborative approach from policymakers, administrators, financial institutions, and technology partners to sustain the program's momentum and maximize its impact.

4. Classification of Government Schemes under DBT

4.1. Cash Transfers to Individual Beneficiaries

DBT provides monetary benefits directly to individual recipients. The distribution of these financial benefits from the ministry or department to beneficiaries can occur through different channels, including:

- Direct transfers from central or state agencies to beneficiaries.
- Transfers routed through state treasury accounts or appointed implementing agencies, as seen in programs like PAHAL, MGNREGA, and NSAP.

4.2. Government-to-Individual In-kind Transfers

In-kind transfers represent another facet of DBT, wherein the government provides tangible benefits to individuals through intermediary agencies. Typically, the government or its designated agent internally allocates funds to procure

goods for public distribution and offers services to specific beneficiaries. These individuals receive goods or services either at no cost or at reduced prices. The Public Distribution System (PDS) exemplifies this, with the Food Corporation of India (FCI) managing the procurement, transportation, storage, and distribution of food grains to Fair Price Shops. The FCI supplies food grains at subsidized rates set by the government, which are below the actual economic costs. The government covers the difference as a consumer subsidy to the FCI. Similarly, the government incurs internal costs to offer in-kind subsidies for other items like kerosene, fertilizers, books, medicines, and vaccines.

5. Prerequisites of DBT

Effective implementation of DBT requires a foundational set of prerequisites that support accurate targeting, efficient delivery, and comprehensive reach. These include:

- **Beneficiary Identification and Database Digitization:** The success of DBT hinges on the accurate identification and digitization of beneficiary databases, ensuring that assistance is targeted to eligible recipients without duplication or error.
- **Bank Account Accessibility:** Opening bank accounts for beneficiaries is crucial for enabling direct transfers, fostering financial inclusion, and reducing dependency on intermediaries.
- **Aadhaar Enrolment:** The Aadhaar system provides a unique identifier for each individual, which is essential for eliminating duplicate and fictitious entries while enhancing data integrity within the DBT framework.
- **Aadhaar Seeding:** Linking Aadhaar to bank accounts and beneficiary databases is critical to prevent fraud and ensure that benefits reach the correct recipients.
- **Last Mile Connectivity and Service Delivery:** Ensuring effective service delivery at the local level is fundamental to DBT's success (Muralidharan *et al.*, 2021). This includes infrastructure that facilitates beneficiary access to DBT services in remote and underserved areas.

6. Theoretical Framework: Public Value Theory and DBT

Public Value Theory, as conceptualized by Moore (1995), emphasizes that public sector organizations should focus on creating value for citizens by delivering services efficiently, equitably, and transparently. An examination of India's Direct Benefit Transfer (DBT) program through this theoretical framework reveals its objective to enhance welfare distribution efficiency, mitigate fraud, and promote financial inclusion. By

leveraging digital infrastructure, DBT not only improves the operational effectiveness of government services but also produces substantial public value by empowering disadvantaged groups and ensuring equitable access to benefits. By promoting cooperation between government entities, financial institutions, and tech companies, DBT establishes and streamlines the process of delivering benefits. This collaborative approach enhances clarity, efficacy, and accessibility, ultimately resulting in improved outcomes for society and increased public trust in the system (Mazzucato & Ryan-Collins, 2022). In this section, we explore how DBT's primary objectives align with Public Value Theory principles, contributing to broader societal and governance outcomes.

6.1. Objectives of Direct Benefit Transfer in India

- **Mapping of actual beneficiaries with benefits:** One of DBT's primary objectives is to ensure the efficient and targeted delivery of subsidies and welfare schemes. By mapping beneficiaries with their entitlements through Aadhaar-linked accounts, DBT minimizes leakages and eliminates intermediaries, ensuring that benefits reach those who need them most. This aligns with Public Value Theory's emphasis on efficiency in public service delivery. The use of technology, such as Aadhaar-based authentication and mobile banking, significantly reduces the time and resources required for traditional manual processes, creating substantial public value by improving the speed and precision of welfare disbursement (Moore, 1995). By eliminating manual processes and intermediaries, DBT enables instant transfer of funds directly into the bank accounts of beneficiaries. This is to ensure that individuals receive their benefits promptly without delays or bureaucratic hurdles.
- **Enhance transparency and accountability:** A key objective of DBT is to improve transparency in the subsidy distribution process. By directly transferring benefits to the bank accounts of beneficiaries, DBT reduces the scope for corruption and ensures accountability at every stage of the process (Masiero & Prakash, 2019). Public Value Theory stresses the importance of transparency in fostering trust between the government and its citizens (Moore, 1995). The introduction of a digital audit trail for every transaction enhances accountability, allowing for real-time monitoring and verification. This system enables authorities to promptly detect and address discrepancies, ultimately reinforcing public trust in the government's ability to manage welfare programs effectively (Yerramsetti, 2019).

- **Strengthening Financial Inclusion:** DBT has a significant role in strengthening financial inclusion. By directly transferring welfare payments to beneficiaries' bank accounts, DBT integrates previously unbanked individuals into the formal financial system (Dar *et al.*, 2022). This promotes economic participation, enabling individuals to save, invest, and access credit, thus improving their overall financial stability. Public Value Theory suggests that public services should contribute to broader societal goals, including economic empowerment and social welfare, both of which are advanced through DBT's efforts to bring marginalized communities into the formal economy (Moore, 1995).
- **Financial inclusion of weaker sections:** Public Value Theory underscores the role of public institutions in fostering social equity by ensuring that services are accessible to all citizens, particularly marginalized groups. DBT is designed to promote financial inclusion, especially for underserved populations such as rural communities, women, and the economically disadvantaged (Bijoy, 2018). By linking subsidies to Jan Dhan accounts and providing access to formal financial services, DBT empowers individuals to manage their finances, save money, and access credit when needed. This not only reduces poverty but also contributes to economic empowerment (Chelliah & Arunkumar, 2018). DBT's focus on reaching the weakest sections of society aligns with the broader goal of public value creation by addressing inequalities in access to resources and opportunities.
- **Reduce duplication of efforts and fraud:** Another crucial objective of DBT is to reduce duplication in welfare delivery. By digitizing beneficiary data and linking it with unique identifiers such as Aadhaar, DBT minimizes the risk of duplicate registrations and fraudulent claims (World Bank, 2020). Public Value Theory emphasizes the need for public services to be not only effective but also trustworthy (Panagiotopoulos *et al.*, 2019). DBT's authentication mechanisms ensure that welfare benefits are directed only to genuine beneficiaries, reducing wastage of government resources and enhancing the legitimacy of the system (Moore, 1995).

7. Direct Benefit Transfer in India

Direct Benefit Transfer (DBT) has been implemented as a universal system since February 2015, with over 29 crore beneficiaries regularly accessing funds through Aadhaar-enabled biometric authentication. Figure 1 shows the DBT Performance across various States of India.

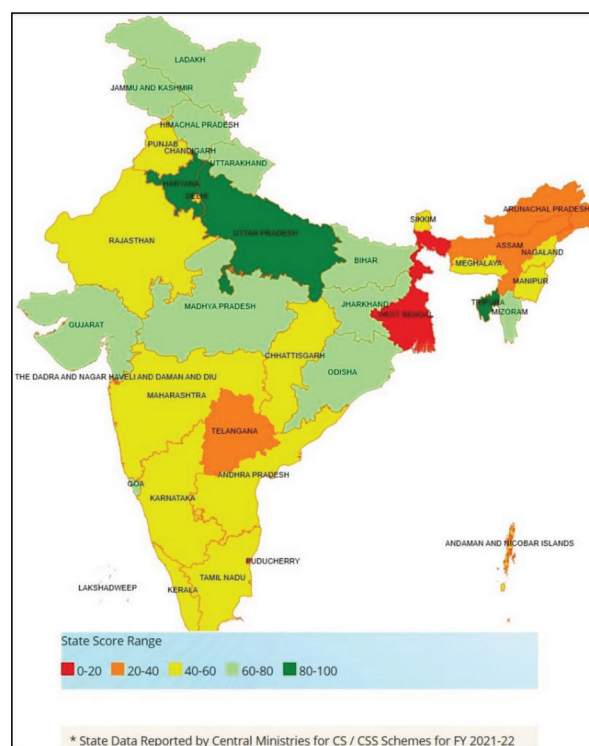


Figure 1: DBT Performance across various States of India
Source: Direct Benefit Transfer, Government of India (2022)

As shown in the figure above, for evaluating the effectiveness of the Direct Benefit Transfer (DBT) program across India's states and Union Territories (UTs), the assessment framework categorizes regions into five performance ranges: 0–20, 20–40, 40–60, 60–80, and 80–100. Performance rankings indicate regional disparities, with Haryana leading and West Bengal trailing, emphasizing the necessity for region-specific strategies to optimize DBT's reach and effectiveness. In the performance ranking of States and Union Territories (UTs) in terms of DBT, Haryana occupies the top position with a score of 88.8, followed by Uttar Pradesh with a score of 85.2. Jammu and Kashmir, including Ladakh, is ranked eighth with a score of 68.3. West Bengal is positioned at the bottom of the list with a score of 13.2.

This ranking is instrumental in highlighting disparities in DBT implementation, with higher scores reflecting more efficient and widespread program delivery. Haryana, Uttar Pradesh, and Tripura emerged as the top performers within the 80–100 range, indicating robust DBT infrastructure and execution. Conversely, West Bengal, scoring below 20, faces significant challenges, underscoring the need for targeted strategies to improve its DBT framework and implementation efficiency. Jammu and Kashmir fall within the 60–80 category, representing moderate success but room for enhancement.

For the fiscal year 2021-2022, DBT performance details across different schemes illustrate the program's scale and reach. Table 1 shows the DBT Details (FY-2021-2022) for various welfare schemes.

- **PAHAL (LPG Subsidy Scheme):** A key player in subsidy management, PAHAL disbursed ₹48.82 billion across approximately 1.02 billion transactions, leveraging DBT to streamline subsidy allocations directly into beneficiaries' bank accounts, while eliminating invalid accounts and minimizing leakages.
- **MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme):** A critical rural employment initiative, MGNREGS transferred over ₹735.51 billion through nearly 510 million transactions, supporting employment opportunities and financial stability in rural households.
- **NSAP (National Social Assistance Programme):** With a focus on social security for vulnerable populations, NSAP distributed ₹60.99 billion across 191.3 million transactions, reflecting DBT's critical role in promoting social welfare.
- **Scholarship Schemes:** Designed to support educational advancement, these schemes collectively transferred approximately ₹106.08 billion through 14.95 million transactions, thus facilitating access to education for economically disadvantaged students.
- **PMAYG (Pradhan Mantri Awaas Yojana – Gramin):** This rural housing program allocated ₹397.68 billion through 11.17 million transactions, underscoring DBT's role in facilitating housing assistance to eligible beneficiaries.
- **PDS (Public Distribution System):** PDS remains a cornerstone of in-kind transfer schemes, with the largest transaction volume, totaling ₹2.17 trillion through over 3.42 billion transactions, illustrating DBT's capacity to manage large-scale distribution of essential goods.
- **Fertilizer Subsidies:** This program reflects DBT's adaptability in various sectors, distributing ₹1.24 trillion through 128.9 million transactions, thereby supporting agricultural productivity by subsidizing critical inputs.
- **Other Schemes:** Encompassing a broad range of initiatives, this category includes ₹1.54 trillion distributed via over 1.87 billion transactions, highlighting DBT's versatility in delivering diverse welfare benefits.

Overall, DBT's impact during FY 2021-2022 demonstrates its transformative role in public welfare delivery. However, as evidenced by regional disparities, targeted improvements in states with lower scores, such as West Bengal, are necessary to ensure equitable access and optimize the overall effectiveness

of DBT across India. For top-performing states, continual assessment and adaptive management strategies are essential to maintain their success and address emerging challenges in beneficiary engagement, data security, and infrastructure scalability.

Table 1: DBT Details (FY-2021-2022) for Various Welfare Schemes

S.No.	Scheme Group Name	Total Direct Benefit Transfer (₹)	Total No. of Transactions
1	PAHAL	48,817,502,805	1019464048
2	MGNREGS	735,513,057,470	510172586
3	NSAP	60,989,228,230	191315210
4	SCHOLARSHIP SCHEME	106,078,186,595	14950205
5	PMAYG	397,680,201,818	11175929
6	PDS	2,170,016,464,215	3421065617
7	FERTILIZER	1,239,618,375,086	128894555
8	OTHERS	1,543,934,089,818	1874450708

Source: Direct Benefit Transfer, Government of India (2022)

8. Key Enablers for DBT Success

DBT's effective rollout in a diverse and large-scale setting like India relies on several key enablers that address the unique challenges of public welfare delivery.

- **The JAM Trinity (Jan Dhan, Aadhaar, Mobile):** At the core of DBT's success is the JAM Trinity, which integrates Jan Dhan bank accounts, Aadhaar identification, and mobile technology. This combination provides a robust platform for cashless, secure, and targeted subsidy distribution, minimizing leakages, and ensuring timely delivery.
- **Business Correspondent Infrastructure:** Introduced by the Reserve bank of India, the Business Correspondents (BCs) act as an alternative to traditional banking, particularly in remote areas where physical bank branches are scarce. BCs provide essential banking services, such as cash transactions, thus facilitating DBT's last-mile delivery. By offering doorstep services, BCs/Bank Mitras bridge the gap between beneficiaries and formal financial services, enhancing DBT's accessibility and effectiveness of DBT in rural and underserved regions.
- **Payments Banks:** A payment bank is like any other bank but operates on a smaller scale, without involving any credit risk. It can carry out most banking operations and enable transfers and remittances through a mobile

phone but cannot advance loans or issue credit cards. Payment banks expand financial services to low-income households and small businesses, allowing for secure transactions without the risks associated with traditional credit. The RBI approved 11 payment bank licenses in 2015, as they are integral to DBT's goal of financial inclusion, particularly in remote areas of the country lacking conventional banking infrastructure.

- **Mobile Money Platforms:** Mobile money represents a dynamic, cashless payment solution that enhances DBT's reach. Mobile-enabled transactions, supported by Aadhaar as verification tools, allow beneficiaries to access funds securely and conveniently. This facilitates not only direct transfers but also encourages broader adoption of digital financial practices among marginalized groups.

9. Implications of Direct Benefit Transfer in India

Direct Benefit Transfer (DBT) initiatives in India have had a profound impact on beneficiaries across various sectors, with significant implications for financial inclusion, social welfare, and economic empowerment. This section examines the multifaceted impact of DBT on different segments of the population, highlighting the benefits accrued and the transformative effects witnessed.

- **Direct, hence no middlemen, no leakage, or corruption:** DBT has been instrumental in reducing leakages and inefficiencies in welfare delivery systems, thereby ensuring that subsidies reach the intended beneficiaries. By eliminating intermediaries and streamlining payment processes, DBT has helped curb corruption and enhance transparency in subsidy disbursements, ultimately maximizing the impact of government interventions (World Bank, 2020). This streamlined approach promotes transparency and accountability to government functioning and planning, as it provides a hassle-free environment to use, and hence, no delay in getting the subsidy amount.
- **Elimination of fictitious accounts:** Linkage of beneficiaries' bank accounts to the Aadhaar biometric system eliminates fictitious accounts, saving huge amounts of government by bringing transparency in the system. The estimated savings from DBT and other governance reforms for FY 2021-22 was reported to be ₹50125.37 crores (Ministry of Finance, 2022).
- **Promotion of Financial inclusion:** One significant impact of DBT is the promotion of financial inclusion among marginalized communities. By facilitating direct subsidy transfers to beneficiaries' bank accounts,

DBT helps individuals gain access to formal banking services, thereby enhancing their financial literacy and resilience. Studies have shown that DBT recipients are more likely to engage in savings and investment activities, leading to greater economic stability and upward mobility (Malladi *et al.*, 2021). Recent data indicate that India's Financial Inclusion Index has risen to 56.4 % by March 2022, underscoring DBT's impact on economic inclusion (Reserve Bank of India, 2022).

- **Improvement in Social welfare outcomes:** DBT has enhanced access to social welfare services, particularly in the healthcare and education sectors. For instance, schemes such as the Janani Suraksha Yojana (JSY) and the Mid-Day Meal Scheme have leveraged DBT to provide targeted financial support to pregnant women and schoolchildren, respectively, leading to increased utilization of maternal and child healthcare services and higher school enrolment rates (Sengupta, 2021).
- **Substantial Cost savings and Efficient Crisis Response:** DBT transactions done in the financial year 2021-22 are 717 crores and has led to savings of 50125.37 crores (Direct Benefit Transfer, Government of India, 2022; Ministry of Finance, 2022). As per the Economic Affairs Secretary to GOI, India saved 27 billion dollars in key central schemes. DBT has proven to be an invaluable tool during crises, as exemplified by the rapid response during the COVID-19 pandemic (PTI, 2023; Singh & Malik, 2022). During this period, lockdowns and social distancing measures rendered Direct Benefit Transfer (DBT) essential for providing relief to millions affected by the crisis. During the 21-day lockdown imposed by the government, the Public Financial Management System (PFMS) team maintained continuous operation of the financial system. They managed to process an unprecedented number of transactions in this period, demonstrating the DBT's ability to quickly adjust and effectively meet emerging requirements. On March 30, 2020, PFMS recorded 2.19 crore transactions in a single day, predominantly attributed to DBT payments. Between March 24 and April 17, 2020, DBT payments through PFMS for central schemes amounted to Rs 27,442.08 crore, benefiting 11.42 crore individuals through programs such as PM-KISAN, MGNREGS, NSAP, PMMVY, NRLM, NHM, and various scholarship schemes via the National Scholarship Portal (NSP) (Sabherwal *et al.*, 2019; Sengupta, 2021). The Government of India transferred approximately Rs 36,659 crore to 16.01 crores beneficiaries during COVID 2019 through PFMS, demonstrating the system's capacity to deliver essential support efficiently under challenging circumstances (Press Information Bureau, 2020).

10. SWOT Analysis of DBT

This section examines DBT through the structured framework of SWOT analysis to assess DBT's strengths and weaknesses, opportunities and threats. This assessment will provide insights into DBT's current status and its potential for future expansion, both in terms of sectoral scope and geographical reach.

10.1. Strengths

- **Efficient and Direct Delivery:** DBT's core strength is in the elimination of intermediaries and use of Aadhaar and mobile technology for direct payments. This has significantly improved the speed and accuracy of benefit disbursement. The JAM Trinity (Jan Dhan, Aadhaar, and Mobile) provides DBT a solid technological infrastructure for cashless, secure, and targeted distribution of subsidies, minimizing leakages and ensuring timely delivery.
- **Reduction of Fraud and Leakages:** Aadhaar-based authentication ensures that subsidies are transferred only to verified beneficiaries, thereby reducing the potential for fraud and leakages in the system. This integration has strengthened the transparency and accountability of welfare programs.
- **Financial Inclusion:** Connecting social welfare programs to Jan Dhan bank accounts has allowed millions of people who previously lacked access to banking services to engage with formal financial institutions. This integration has not only improved access to subsidies but also empowered recipients to engage in the broader financial system.
- **Enhanced Transparency and Accountability:** By creating an audit trail for all transactions, DBT enhances transparency in the subsidy distribution process. Real-time monitoring of funds allows for better oversight and quick resolution of discrepancies, fostering accountability in public administration.
- **Cost Savings and Efficient Crisis Response:** DBT has generated significant cost savings by eliminating fictitious accounts and reducing the need for intermediaries. Its effectiveness during the COVID-19 pandemic demonstrated its scalability and ability to deliver rapid financial assistance under emergency conditions.
- **Broad Sectoral Coverage:** DBT is operational across numerous sectors, including agriculture (e.g., PM-KISAN), healthcare (Ayushman Bharat), education (scholarships), and housing (PM Awas Yojana). This wide scope enables DBT to serve diverse groups of beneficiaries with targeted assistance.

10.2. Weaknesses

- **Exclusion Errors:** Beneficiaries may be excluded from receiving their entitlements due to technical errors such as mismatches between their Aadhaar details and welfare applications. For instance, many farmers under PM-KISAN face delays due to name mismatches between Aadhaar and welfare applications (Joy, 2018). Resolving these errors often requires beneficiaries to travel long distances to update their details at Common Service Centers, leading to lost income and further delays. Data from East Godavari district show that 51% of farmers who experienced difficulties receiving their PM-Kisan benefits were excluded due to Aadhaar-related issues. These errors not only prevent deserving individuals from receiving benefits but also highlight the need for robust data validation protocols to ensure accurate and timely delivery of welfare services (Malladi *et al.*, 2021).
- **Limited Banking Infrastructure:** In rural areas, the lack of access to bank branches and cash-out points (COPs) continues to pose a challenge, making it difficult for beneficiaries to withdraw funds. This infrastructural gap hinders the system's ability to reach its full potential in remote regions (World Bank, 2020). Additionally, petty corruption and non-compliance at COPs further undermine the efficiency of the DBT process. According to the Dvara-CMIE Survey (2020), nearly 40% of households attempting to withdraw cash during the COVID-19 pandemic have faced issues. These challenges fall into three broad categories: limited availability and accessibility of COPs, technical issues such as network and biometric authentication failures, and instances of fraud and misconduct by banking agents.
- **Digital Literacy Gaps:** Digital literacy refers to the ability of individuals and communities to comprehend and utilize digital technologies effectively in everyday life. A major weakness is the low level of digital literacy among rural populations, which prevents beneficiaries from accessing or understanding how to utilize DBT services effectively. This digital literacy gap widens inequality in the delivery of benefits (Gupta & Pal, 2020). The 2019 pandemic has accelerated the digital transformation of industries, creating huge opportunities for organizations around the globe. Demand for being literate digitally is driven by market forces that help people acquire new skills and aggressive use of technology in personal as well as professional life (Singh & Malik, 2022). However, as per the data, only 38% of households in India are digitally literate, limiting their ability to access DBT benefits independently.

10.3. Opportunities

- **Technological Innovations:** Emerging technologies such as blockchain and artificial intelligence (AI) present opportunities to enhance DBT's security, prevent fraud, and predict exclusion errors more efficiently. Blockchain could offer tamper-proof transaction records, while AI could improve beneficiary targeting (Banerjee & Chandani, 2022). These technologies can streamline real-time data processing and reduce administrative overhead, offering a modern framework for future welfare schemes.
- **Public-private partnerships:** Collaborating with fintech companies and mobile service providers could enhance DBT's reach, particularly in underserved regions. These partnerships could boost DBT's reach, particularly in rural areas where mobile banking and digital platforms are still underdeveloped. By leveraging the infrastructure and expertise of private sector players, DBT can expand its operational capacity (Palaco *et al.*, 2018; Iyer, 2022).
- **Expansion into new sectors:** While DBT is already implemented across critical sectors such as healthcare, education, agriculture, and housing (including schemes like PM-KISAN, Ayushman Bharat, PM Awas Yojana, and scholarships), there remains significant potential for expanding DBT's role in other domains. These include environmental sustainability, social security schemes for informal workers, and infrastructure development. This expansion could further enhance efficiency, reduce bureaucratic red tape, and promote inclusive growth in untapped sectors of public welfare (Direct Benefit Transfer, Government of India, 2022).

10.4. Threats

- **Technical Failures and Biometric Mismatches:** Network failures and Aadhaar authentication issues can disrupt payments, reducing trust in the system's operational reliability. Persistent technical problems could undermine public confidence in DBT (Press Information Bureau, 2015b).
- **Corruption at Local Levels:** Despite the reduction of intermediaries, instances of petty corruption at cash-out points (COPs) remain a concern, particularly in rural areas. These issues threaten to erode the gains made in improving transparency (MicroSave Consulting, 2021).
- **Digital Divide:** The digital divide in rural India remains a significant obstacle to fully realizing the benefits of DBT. Limited access to the internet and digital services in these areas means that many beneficiaries struggle to access their entitlements. This divide risks increasing inequality, as urban populations with greater access to

technology benefit more from the system, while rural areas lag behind (World Bank, 2020).

11. Recommendations

In light of the findings from the SWOT analysis, several managerial and policy recommendations are proposed to enhance the performance of Direct Benefit Transfer (DBT) initiatives in India:

- **Strengthening Digital Infrastructure:** The enhancement of Aadhaar-based authentication and biometric technologies can potentially improve the accuracy and integrity of beneficiary databases, thereby reducing the incidence of fraudulent practices and resource leakage. This can be accomplished through the following methods:
 - **Infrastructure Development:** Invest the expansion of digital infrastructure, including Internet connectivity and mobile network coverage, particularly in rural and remote areas where the digital divide is most pronounced.
 - **Data Validation and Analytics:** Regular updates to beneficiary databases and advanced analytics can help identify discrepancies such as inactive, redundant accounts, and potential fraud, reducing exclusion errors.
 - **Mobile Technology:** Deploy mobile solutions for online beneficiary registration, authentication, and communication, enabling real-time verification and monitoring.
 - **Interagency Collaboration:** Foster collaboration between government agencies, financial institutions, and technology providers to share data and expertise, enhancing verification processes.
 - **Engagement of Community:** Engage local communities in beneficiary identification to ensure accurate targeting, foster trust, and reduce errors at the ground level.
- **Enhance last-mile delivery mechanisms:** It is imperative to focus on improving last-mile delivery to ensure timely and efficient subsidy disbursal, especially in rural and remote areas. Innovative solutions, such as mobile banking and agent networks, coupled with investments in infrastructure and capacity building, can enhance access to banking services. The following are some key strategies to achieve this:
 - **Technology Integration:** Utilize digital platforms and mobile applications for seamless online registration, electronic fund transfers, and real-time payment tracking.

- Agent Networks: Establish grassroots agent networks to assist beneficiaries with registration, verification, and grievance redressal.
- Financial Inclusion: Encourage beneficiaries to open bank accounts or use digital wallets, facilitating direct transfers and minimizing delays and leakages.
- Capacity building: Provides training for local officials, agents, and beneficiaries to ensure they can effectively navigate the DBT system.
- Monitoring and evaluation: Regular audits, beneficiary feedback mechanisms, and performance assessments for delivery partners should be implemented to ensure accountability.
- Public Awareness Campaigns: Educate beneficiaries about their entitlements and how to access them, promoting regular updates of information.
- Blockchain Technology: Explore blockchain for secure, transparent transactions, reducing fraud, and enhancing delivery integrity.
- Private Sector Partnerships: Collaborate with mobile network operators and fintech firms to leverage their infrastructure for more efficient delivery.
- Enhancing Digital Literacy: Bridging the digital divide is essential to enable all eligible beneficiaries to access direct benefit transfer (DBT). Recommendations include the following:
 - Digital literacy programs: Implementing comprehensive digital literacy programs to educate beneficiaries about smartphone usage, Internet access, and navigation of DBT portals or mobile applications.
 - Multilingual Support: Ensure that DBT platforms and applications accommodate multiple languages to address diverse linguistic populations, thereby mitigating language barriers to access.
 - Assisted Enrolment Centres: Establish assisted enrolment centres in rural and underserved areas where beneficiaries can obtain support from trained personnel to register for DBT programs and navigate digital platforms.
 - Collaboration with NGOs: Engage in partnerships with non-governmental organizations (NGOs), community-based organizations, and local leaders to reach marginalized communities and provide them with assistance in accessing DBT benefits.
 - Awareness Campaigns: Conduct targeted awareness campaigns to inform beneficiaries about the availability and advantages of DBT programs, as well as the various methods available for accessing and utilizing them.

- Regular Feedback Mechanisms: Establish systematic feedback mechanisms to gather input from beneficiaries regarding their experience in accessing DBT benefits.

12. Conclusion

The Direct Benefit Transfer (DBT) initiative in India has proven to be a transformative force in the country's welfare delivery system, significantly improving efficiency, transparency, and financial inclusion. By leveraging the JAM trinity (Jan Dhan, Aadhaar, and Mobile), DBT has not only streamlined the flow of financial resources to beneficiaries but also strengthened the overall governance framework by minimizing leakages and reducing dependency on intermediaries.

From a management perspective, DBT represents a successful example of public sector innovation, utilizing technology to achieve substantial gains in efficiency, transparency, financial inclusion, and sectoral reach. The SWOT analysis identifies key opportunities to enhance DBT's operational efficiency, including the adoption of technological innovations, fostering public-private partnerships, and expanding its application into new sectors. However, persistent challenges such as exclusion errors, inadequate rural banking infrastructure, and the digital divide continue to impede the program's full potential. Despite these challenges, DBT has the potential to set a global benchmark for digital governance and welfare management in developing countries. Continuous improvements in last-mile delivery and the adoption of innovative technologies will be essential for DBT to achieve inclusive growth and social equity. However, its sustained success depends on addressing operational inefficiencies and fostering collaborative partnerships.

13. Limitations and Future Scope

The present study provides a comprehensive analysis of the Direct Benefit Transfer (DBT) initiative in India, based on secondary data sources and literature reviews. However, future research could strengthen findings with empirical data from beneficiaries and stakeholders to capture regional nuances. Additionally, exploring the use of emerging technologies like blockchain and AI, and examining public-private partnerships in scaling DBT, would provide valuable directions for enhancing the system's efficiency and reach. Comparative analyses with digital welfare systems in other developing countries could also provide insights for enhancing scalability and replicability.

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Authorship Contribution

Priyanka Sharma conceptualized the study, designed the literature review framework, conducted analysis and synthesis, and wrote the overall manuscript structure. Shefali Sharma contributed to research design, literature collection, analysis, and manuscript review & editing. Barsha Rani provided socio-economic impact analysis of government welfare programs and contributed to manuscript revision. All authors contributed to and approved the final version.

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Conflict of Interest

No potential conflict of interest was reported by the authors.

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