

PUBLIC DISTRIBUTION SYSTEM IN INDIA (PDS): A REVIEW STUDY

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ABSTRACT

The Public Distribution System (PDS) has been one of India's most significant welfare interventions aimed at ensuring food security and reducing poverty among vulnerable populations. Designed to provide essential commodities at subsidized prices, the PDS plays a crucial role in addressing chronic poverty, hunger, and social inequality, particularly in economically backward and rural regions. Despite extensive policy reforms and technological interventions, the effectiveness of PDS as a tool for poverty eradication remains a subject of critical academic and policy-oriented inquiry.

This study critically examines the role of the Public Distribution System in poverty eradication, with special reference to structurally disadvantaged regions characterized by high poverty incidence, socio-economic marginalization, and administrative constraints. Drawing upon secondary data sources such as government reports, policy documents, census data, and existing scholarly literature, the study analyzes the functioning, reach, and outcomes of PDS in ensuring food accessibility and livelihood security. Key dimensions explored include beneficiary coverage, targeting efficiency, leakage and corruption, quality and quantity of food grains, and the impact of recent reforms such as digitization and Aadhaar-based authentication.

The findings suggest that while PDS has contributed significantly to mitigating food insecurity and stabilizing consumption patterns among poor households, its potential as an effective poverty eradication tool is often undermined by operational inefficiencies, exclusion errors, inadequate monitoring, and regional disparities in implementation. The study emphasizes that poverty is a multidimensional phenomenon, and food subsidies alone are insufficient to ensure sustainable poverty reduction.

The paper concludes by highlighting the need for stronger governance mechanisms, community participation, transparency, and convergence of PDS with other poverty alleviation programmes. Strengthening these dimensions can enhance the effectiveness of PDS and reinforce its role in promoting social justice and inclusive development.

Keyword: *Public Distribution System; Poverty Eradication; Food Security; Social Welfare; Rural Development; Inclusive Growth*

1. INTRODUCTION

The Public Distribution System (PDS) in India represents one of the most significant instruments of the state's welfare architecture aimed at reducing poverty, ensuring food security, and providing subsidised essentials to the poor. Originating in the aftermath of World War II as a mechanism to manage scarcity and price stability (Kumar, Shinoj, & Joshi, 2018; turn0search0), the PDS has evolved into a pan Indian network of subsidised food grain distribution managed through Fair Price Shops (FPS). Over time, the PDS

has been restructured to incorporate broader socio economic goals, including employment generation, nutritional support for disadvantaged households, and direct poverty alleviation through food subsidies.

The Indian National Food Security Act (NFSA) of 2013 further reinforced the PDS by enshrining the right to food for eligible citizens, thereby extending legal entitlement to subsidised cereals for nearly two thirds of the population. The system was also strengthened with technology interventions such as Aadhaar based biometric

authentication and electronic Point of Sale (e PoS) systems (turn0search8). Despite these initiatives, the PDS faces entrenched challenges including leakages, corruption, exclusion of deserving households, and operational inefficiencies that have hindered its role as an effective anti poverty tool.

This article critically examines the evolution, achievements, and limitations of the PDS as a tool for poverty eradication in India. It assesses whether the system has met its objectives of improving food security and reducing poverty, explores structural and operational constraints, and discusses policy reforms to enhance its effectiveness.

2. LITERATURE REVIEW ON PUBLIC DISTRIBUTION SYSTEM (PDS) IN INDIA

The Public Distribution System (PDS) has been one of the most important social protection and food-security programmes in India. The literature on PDS broadly focuses on food security, poverty reduction, nutritional outcomes, targeting, leakage and diversion, accessibility, gender, administrative reforms, digitisation, and the implementation of the National Food Security Act (NFSA), 2013. The following ten studies provide a useful foundation for a literature review on the PDS in India.

Kochar (2005) examined whether targeted food subsidies under the PDS could improve the nutritional status of poor households. Using empirical evidence from India, the study found that calorie consumption was relatively less responsive to food-grain subsidies. This suggests that a substantial subsidy may be necessary to generate meaningful nutritional improvements. Importantly, the study also found that targeting could reduce the probability that poor households participate in the programme when compared with a more universal system. Thus, the study raises an important concern about the trade-off between targeting efficiency and actual access by poor households. This study is important for understanding the problems associated with BPL targeting and the accessibility of PDS benefits among poor households.

Khera (2011) investigated the utilisation and impact of the PDS using field-survey evidence from Rajasthan. The study identified a phenomenon of “under-purchase”, in which households did not purchase their full PDS

entitlement even though market prices were higher. Khera argued that supply-side problems, including diversion and irregular availability, were important explanations for this behaviour. The study further suggested that PDS availability could influence the composition of cereal consumption, although its effect on the overall level of cereal consumption was more limited. The study demonstrates that possession of a ration card does not necessarily guarantee effective access to food grains.

Drèze and Khera (2013) examined the contribution of the PDS to reducing rural poverty using National Sample Survey data for 2009–10. They estimated that the PDS reduced the rural poverty-gap index by approximately 18–22 per cent at the all-India level. The effect was substantially greater in states where the PDS was functioning effectively, including Tamil Nadu and Chhattisgarh. Their findings demonstrate that subsidised food can operate as an important form of income support and social protection for rural households. This study provides strong evidence for examining the PDS as an instrument of poverty reduction rather than merely a food-supply mechanism.

Kaushal and Muchomba (2015) examined the relationship between consumer price subsidies and nutritional outcomes in India. Their work questioned the assumption that food subsidies automatically translate into better nutritional outcomes. Earlier evidence reviewed in their study indicated that expansion of PDS subsidies had limited effects on calorie and protein intake. This highlights the importance of considering household food choices, market conditions and the composition of subsidised commodities when evaluating PDS effectiveness. The study is useful for assessing whether PDS benefits translate into improvements in household nutrition and food consumption.

Krishnamurthy, Pathania and Tandon (2017) studied food-price subsidies and nutrition in the context of state-level reforms to India's PDS. Their research contributes to the growing evidence that the effects of PDS reforms can vary according to the way the programme is implemented at the state level. The study shows that changes in food subsidies can affect household food consumption, making the design and implementation of PDS reforms particularly important. The study supports comparative analysis of PDS

performance across Indian states and highlights the importance of state-level institutional arrangements.

Drèze and Khera (2015) work on PDS leakages examined one of the most persistent criticisms of India's food-distribution system: the diversion of subsidised food grains before they reach intended beneficiaries. Their research emphasised that the extent of leakage is not uniform across India and that states with stronger monitoring, transparency and administrative reforms tend to perform better. The authors' subsequent research also highlights the importance of understanding state-specific reforms rather than treating the Indian PDS as a single homogeneous system. Khera's publication record identifies "Understanding Leakages in the Public Distribution System" as a major contribution to this debate. Leakage, diversion and corruption are central variables for evaluating the effectiveness of PDS at the district and state levels.

George and McKay (2019) conducted a systematic review of published research on the PDS and food security in India. Their review identified 23 eligible peer-reviewed studies from a much larger initial search. They concluded that PDS plays an important role as a social safety net and can contribute to food security, but its effectiveness is constrained by operational problems such as mistargeting, under-coverage, diversion, corruption and administrative inefficiencies. They also identified a lack of sufficient empirical research connecting PDS functioning with broader food-security and nutritional outcomes. This is particularly important because it synthesises earlier PDS literature and identifies research gaps that can be addressed through field-level studies.

Drèze, Gupta, Khera and Pimenta (2022) assessed the PDS after implementation of the National Food Security Act, 2013, focusing on six relatively poor states: Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and West Bengal. The study found important improvements in coverage, targeting, PDS reforms and political commitment to food security. However, Bihar and Jharkhand continued to face considerable challenges, while even better-performing states had unresolved problems in achieving the full objectives of the NFSA. This study is especially significant for research on Jharkhand and the Palamu Division, because it specifically includes Jharkhand in its assessment.

Bohtan, Mathiyazhagan and Vrat (2020) reviewed the Indian PDS from a supply-chain management perspective. Their study examined different stakeholders and stages of the PDS and identified deficiencies in procurement, storage, transportation, distribution and delivery. The authors argued that improvements in supply-chain management are necessary for increasing the efficiency and effectiveness of food-grain distribution. They also identified gaps between problems diagnosed in the literature and the proposed solutions, suggesting the need for further research on PDS supply-chain management. This perspective is useful for examining problems at the Fair Price Shop (FPS), transportation, storage and last-mile delivery levels.

Research by Muralidharan, Niehaus and Sukhtankar has contributed to the debate on technological and institutional reforms in India's welfare programmes, including the PDS. Their work has examined alternatives such as Direct Benefit Transfers (DBT), biometric authentication, digital monitoring and beneficiary choice. They argue that although DBT may reduce some administrative costs and leakages, it can also create risks when beneficiaries have poor access to banks, markets or adequate transfer values. Consequently, reforms should improve efficiency without reducing beneficiaries' ability to obtain food security. This literature is useful for examining the transition from conventional PDS administration towards e-PoS, biometric authentication, digitisation and DBT.

The above literature reveals that the PDS has produced both positive and negative outcomes. On the positive side, PDS has been identified as an important instrument of food security, poverty reduction, income support and social protection. Evidence from Drèze and Khera indicates that an effective PDS can substantially reduce the poverty gap, while later research indicates improvements in coverage and functioning following reforms associated with the NFSA. At the same time, several studies identify persistent structural problems. Leakage, diversion, corruption, mistargeting, under-coverage, irregular supply, transaction costs and poor-quality food grains can reduce the actual benefits received by households. Khera's research particularly demonstrates that households may possess an entitlement but still fail to obtain their full quota because of supply-

side constraints. The literature also shows that PDS performance varies considerably across states and regions. States with stronger administrative institutions, transparency mechanisms and political commitment tend to achieve better outcomes. The post-NFSA evidence from Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and West Bengal reinforces this state-level variation. Another important theme is the relationship between PDS and nutrition. The literature does not establish a simple relationship between subsidised food and improved nutritional status. Some studies report limited effects on calorie or nutrient intake, while newer research suggests that a more generous and inclusive PDS can increase subsidised rice purchases and allow households to redirect expenditure towards pulses, vegetables, edible oil and other foods. Finally, recent literature increasingly focuses on technological and institutional reforms. Digitisation, biometric authentication, electronic point-of-sale machines, online monitoring and DBT have the potential to improve transparency and reduce diversion. However, technology alone cannot resolve problems of physical accessibility, irregular supply, market availability or exclusion.

3. RESEARCH GAP

A significant gap remains between national-level assessments of PDS and micro-level studies of beneficiaries' experiences. Much of the literature concentrates on national or state-level data, while comparatively fewer studies examine how PDS actually affects households at the district, block and village levels. George and McKay also identified limitations in the available evidence concerning the wider relationship between PDS functioning, food insecurity and nutritional outcomes. Therefore, a district-level study can make an important contribution by examining awareness, accessibility, regularity of supply, quality of food grains, satisfaction, household expenditure, food security, problems faced by beneficiaries and the effectiveness of digital reforms. Such a research approach is particularly relevant for understanding variations in PDS implementation in economically disadvantaged regions.

4. HISTORICAL EVOLUTION PDS

The PDS was introduced in India in the early 1940s as a wartime measure to ensure food

availability amid shortages and price instability. Over the decades, it became institutionalised within India's broader food security regime. After independence, the system expanded to include procurement, storage, and distribution functions to stabilise prices and protect vulnerable populations from food insecurity. The NFSA (2013) marked a transformative moment by legally entitling eligible households to subsidised food grains, making the PDS a welfare right rather than discretionary assistance (turn0search4).

5. THE OBJECTIVE OF THE PAPER

To critically examine the role and effectiveness of the Public Distribution System (PDS) as a tool for poverty eradication in India.

5.1. Contribution of PDS to Poverty Reduction

a. Food Security and Nutrition

Several studies assert that the PDS has played a measurable role in improving food security and reducing poverty in India. Kumar et al. (2018) found that the PDS has contributed significantly to reducing under nutrition and enhancing food security over successive survey rounds. They argue that the system continues to serve as a safety net for the country's poorest populations, reducing income volatility and protecting vulnerable households from hunger (turn0search0).

Additionally, research indicates that public investment in PDS correlates with lower levels of certain forms of malnutrition among participating households compared to non participants (Panda et al., 2020). Although the PDS primarily focuses on calories through subsidised cereals, its existence reduces severe deprivation and enables marginal consumption smoothing among impoverished families (turn0search12).

b. Poverty Alleviation

By reducing the monetary burden of purchasing staple foods, the PDS indirectly augments household incomes. Food subsidies effectively act as implicit income transfers, especially for those below the poverty line, allowing funds to be diverted to other basic needs such as education, healthcare, and shelter. Without such subsidies, the proportion of income spent on food by the poor could be significantly higher, precipitating deeper cycles of poverty.

In states like Tamil Nadu and Kerala, effective functioning of the PDS has correlated with lower poverty rates and stronger social outcomes compared to states with dysfunctional systems (turn0search1). Both states have long histories of more universal and better administered PDS operations—reflecting how efficient distribution networks can amplify welfare outcomes.

c. Operational Shortcomings and Structural Challenges

Despite its theoretical promise, the PDS has faced persistent challenges that have compromised its performance as an anti poverty tool. These challenges are structural, administrative, and behavioural in nature, affecting its ability to reach the most vulnerable.

D. Leakages and Diversion

Leakages — the diversion of subsidised grains from the PDS supply chain to the open market — remain one of the most widely reported issues. Studies have documented that a considerable portion of the food grains meant for poor households never reach them due to pilferage at multiple stages: storage, transportation, and at FPS level. This diversion undermines food security outcomes and weakens the system's poverty impact.

Leakages persisted even as technological interventions were introduced. Data from several analyses show that despite the introduction of e PoS machines and biometric identification, significant quantities of grains are still diverted or lost. Corrupt practices such as under weighing of grains, ghost beneficiaries, and dealer related manipulations exacerbate this problem.

6. IDENTIFICATION ERRORS: INCLUSION AND EXCLUSION

Targeting errors in the identification of beneficiaries remain a structural flaw. Exclusion of genuinely poor households ("exclusion errors") and inclusion of non poor households ("inclusion errors") distort the distribution network and dilute resources. Sahoo, Krishna, and Kumbhare (2019) highlighted that approximately 39.6% of poor households possess ration cards, while 60.4% do not — signifying major exclusion. Concurrently, about 26.3% of non poor households hold ration cards, representing inclusion error (turn0search3). These

inaccuracies reduce the system's effectiveness in targeting and eradicating poverty.

Instances of fake or ineligible beneficiaries being included in the PDS rolls have surfaced in real world examples. For example, over 37,000 fake beneficiaries were identified in Garhwa district, prompting administrative action to remove them (turn0news24). Such cases illustrate the persistence of identity and targeting issues that dilute the reach of policy.

7. URBAN BIAS AND REGIONAL DISPARITIES

Although PDS is implemented nationwide, its reach and performance vary significantly across states and regions. Urban centres often have more FPS outlets with better infrastructure, while rural and remote areas may face accessibility, stock, and logistical challenges (turn0search1; turn0search6). This urban bias undermines the PDS's ability to support rural populations, where poverty rates and vulnerability are often higher.

Moreover, implementation disparities across states result in uneven impacts. Southern states like Tamil Nadu and Kerala have historically achieved better distribution efficiency, while states like Bihar and Uttar Pradesh struggle with leakages and poor oversight. This uneven governance weakens the system's national impact on poverty alleviation.

8. QUALITY OF FOOD AND NUTRIENT DIVERSITY

The quality and nutritional content of food grains supplied through FPS is another critical concern. The PDS largely focuses on cereals like rice and wheat, offering limited diversity in diet options. This restricted focus on caloric sufficiency, rather than balanced nutrition, constrains the system's ability to improve broader health outcomes, especially for children and pregnant women (turn0search16; turn0search8). The absence of nutritious foods like pulses, oils, and micronutrient rich items reduces the effectiveness of PDS in addressing malnutrition and related poverty traps.

9. TECHNOLOGICAL AND INFRASTRUCTURE ISSUES

Technological interventions like biometric authentication and e PoS machines were introduced to enhance transparency and reduce leakages. However, implementation challenges,

such as server failures, connectivity gaps, and biometric mismatches, have often disrupted distribution. For example, beneficiaries in Ranchi reported repeated inability to collect rations due to server glitches, resulting in loss of daily wages and frustration (turn0news25).

Infrastructure issues — including insufficient storage capacity, poor transportation logistics, and inadequate electrical connectivity at FPS outlets — further compound operational delays and wastage (turn0search8). Poor storage facilities also contribute to deterioration and spoilage, reducing the value of grains meant for the poor.

10. POLICY REFORMS AND INNOVATIONS

To address these persistent challenges, policymakers have proposed and, in some cases, implemented reforms aimed at enhancing the PDS:

11. TECHNOLOGICAL ENHANCEMENTS

Integrating technology to curb leakages and enhance transparency remains a key focus. Real time monitoring systems using geo fencing, dual SIM connected e PoS machines, and advanced authentication systems have been trialled in places like Delhi to ensure accurate distribution and eliminate ghost beneficiaries (turn0news26). Such technology supports accountability and can significantly reduce diversion.

12. REVAMPING TARGETING MECHANISMS

Efforts to periodically update beneficiary lists aim to reduce inclusion and exclusion errors. Administrative reviews and verification can help identify ineligible beneficiaries and extend access to genuinely needy households (turn0news23; turn0news29). The NFSA's legal backing also obliges states to maintain accurate records to uphold rights.

13. DIVERSIFICATION OF COMMODITIES

Expanding the basket of subsidised commodities to include pulses, millets, and other nutritious foods has been recommended to enhance the PDS's role in nutritional security (turn0search8). This could improve health outcomes for poor populations and address micronutrient deficiency alongside calorie sufficiency.

14. ALTERNATIVE DELIVERY MECHANISMS

Proposals such as Direct Benefit Transfer (DBT) to beneficiaries' bank accounts seek to address misuse and empower beneficiaries to procure food as needed. States like Andhra Pradesh have considered DBT schemes, enabling flexibility and reducing dependency on FPS (turn0news28). This approach could complement PDS delivery, particularly where infrastructure and accountability are weak.

15. STRENGTHENING FPS VIABILITY AND ACCOUNTABILITY

Improving profitability and support for FPS owners is critical to sustain the network. Measures such as higher dealer commissions, integration of PDS services with other community services, and stronger grievance redressal mechanisms can enhance operational efficiency (turn0search8).

16. DISCUSSION

a. Strengths of the PDS

Despite its shortcomings, the PDS remains vital in India's poverty alleviation strategy:

- It provides basic food security directly to millions of poor households, reducing vulnerability to hunger and deprivation.
- By lowering household food expenditure, it functions as an implicit income support mechanism, enabling poor families to allocate resources to other essential needs.
- The statutory entitlements under the NFSA make food security a legal right, strengthening the accountability of government institutions.

b. Limitations and Risks

- However, the PDS's contribution to poverty eradication is moderated by inefficiencies:
- Leakages and diversion significantly reduce the absolute volume of grains reaching the poor.
- Targeting errors persistently block access for some of the poorest households while allowing ineligible families to receive benefits.
- The narrow focus on cereals limits the PDS's ability to improve nutritional outcomes.

- Operational challenges with technology and infrastructure have dampened gains from modernisation efforts.

c. Interpreting Impact on Poverty

Empirical evidence suggests that while the PDS improves food security and reduces extreme deprivation, it may not be sufficient to eradicate poverty on its own. Poverty is multifaceted — encompassing lack of education, income, healthcare, and social exclusion — and thus requires a suite of policy interventions. The PDS should be viewed as part of a broader social protection ecosystem that includes employment programmes, direct cash transfers, education subsidies, and healthcare initiatives.

16. CONCLUSION

The Public Distribution System in India has served as a cornerstone of the country's anti poverty strategy by guaranteeing subsidised food grains to millions of vulnerable households. It has improved food security and contributed to reducing certain dimensions of poverty. However, structural challenges such as leakages, targeting errors, regional disparities, and limited nutritional scope constrain its effectiveness.

Reforms aimed at technological transparency, better targeting, diversification of food items, and improved FPS viability can strengthen the PDS. Yet, to fully realise its potential as a tool for poverty eradication, the PDS must be integrated with broader welfare measures that address income generation, healthcare access, education, and social inclusion. Only through a comprehensive, multi pronged policy framework can India hope to eradicate poverty in all its dimensions.

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