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RICE, RIGHTS, AND REALITY: AN EMPIRICAL ASSESSMENT OF THE PUBLIC DISTRIBUTION SYSTEM IN NIRMAL DISTRICT, TELANGANA

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ABSTRACT

The Public Distribution System (PDS) remains India's primary institutional mechanism for ensuring food security. While the state of Telangana has been lauded for its technological interventions and welfare-oriented policies (e.g., *Rythu Bandhu*), the ground-level efficacy of PDS varies significantly across districts. This paper presents a mixed-method study of the PDS in Nirmal District, combining empirical survey data (n=400 households across four mandals) with theoretical frameworks of public choice theory and state capacity. The study assesses parameters of accessibility, targeting errors (exclusion/inclusion), corruption (leakage), and satisfaction. Findings indicate that while digitization (e-POS) has reduced mass-level diversion, new forms of rent-seeking have emerged at the level of fair price shop (FPS) dealers. The paper concludes that technological fixes without institutional accountability reproduce inefficiencies, advocating for a community-monitoring model.

Keywords: Public Distribution System, Food Security, Telangana, Nirmal District, State Capacity, Leakage, e-POS.

Introduction

The right to food is a fundamental human right, yet its translation into policy outcomes remains contested in developing economies. India's PDS, governed by the National Food Security Act (NFSA) 2013, aims to provide subsidized food grains to approximately 800 million beneficiaries. Telangana, a state formed in 2014, has positioned itself as a model for welfare governance, implementing 100% digitization of PDS transactions and biometric authentication via e-POS (Electronic Point of Sale) machines. However, a stark paradox exists: state-level reports show high offtake rates, yet district-level studies reveal persistent complaints about quality, quantity, and arbitrary dealer behavior. Nirmal District,

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located in the northern agro-climatic zone of Telangana, presents a unique case. It is a former part of undivided Adilabad district, characterized by a mix of tribal (Gond, Kolam) populations, agricultural laborers, and weaver communities. Preliminary observations suggest that despite Telangana's progressive policies, remote mandals in Nirmal face supply chain disruptions.

This study is guided by three research questions. First, what is the level of awareness, accessibility, and satisfaction with PDS among beneficiaries in Nirmal District? Second, how do theoretical models of rent-seeking and state capacity explain the empirical patterns of leakage and exclusion in the district? Third, does technological modernization (e-POS) reduce corruption or merely shift its locus? The significance of this paper lies in bridging empirical granularity with theoretical rigor, moving beyond simple efficiency metrics to understand the political economy of food distribution in a newly formed district of a relatively young state.

Theoretical Framework

This paper draws on two complementary theoretical lenses. The first is ***public choice theory and rent-seeking, as articulated by Anne Krueger in 1974.*** PDS creates artificial scarcity by setting below-market prices for rice (Re. 1/kg in Telangana). According to public choice theory, when prices are distorted, economic agents—including dealers, transport contractors, and politicians—seek rents, which are unearned profits from controlling access to the commodity. In Nirmal, we hypothesize that ration card issuance is not a purely bureaucratic act but a strategic resource. Rent-seeking manifests in several forms, including demanding bribes for new cards, under-weighing grain, and diverting subsidized rice to the open market.

The second theoretical lens concerns ***state capacity and implementation deficit, drawing on the work of Michael Mann and Michael Woolcock.*** Mann's distinction between despotic power, or power over society, and infrastructural power, or power through society, is crucial here. Telangana has high despotic power, meaning the ability to decree policies, but variable infrastructural power, meaning the actual ability to implement policies in remote villages. In Nirmal's interior mandals, such as Dandepally and Kuntala, weak infrastructural power leads to supply chain delays, poor road connectivity to fair price shops, and a lack of grievance redressal. This theoretical lens moves the analysis from individual corruption to systemic institutional incapacity.

The third lens is the ***Technological fix thesis, associated with Evenson and Gollin.*** Technology is not neutral. The introduction of e-POS machines is a "technical fix" for a social problem. Using fragments of Actor-Network Theory (ANT) from Latour, we examine how the e-POS machine interacts with local power structures. The critical question is whether it empowers the beneficiary or the dealer. Initial evidence suggests that dealers use "server down" excuses to bypass biometric authentication, thereby reverting to manual, corrupt distribution.

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Research Methodology

A mixed-method, sequential explanatory design was employed for this study. The study area was Nirmal District in Telangana, selected based on its high tribal population, rural-urban gradient spanning from Nirmal town to remote villages, and reported variability in PDS performance. Sampling was conducted using a stratified random approach. A total of 400 households were selected from four mandals: Nirmal (urban), Lokeswaram (semi-urban), Kuntala (rural tribal), and Soan (rural non-tribal), with 100 households per mandal. The inclusion criterion was possessing an NFSA ration card, either Priority Household or Antyodaya Anna Yojana (AAY).

Data collection took place from January to March 2025. Quantitative data were gathered through a structured survey questionnaire covering demographics, frequency of ration collection, quantity received versus quantity entitled, bribe payments, quality of grain, e-POS functionality, and grievance redressal. Qualitative data were collected through 20 semi-structured interviews, including five fair price shop dealers, five district supply officers, and ten beneficiaries. Two focus group discussions were conducted in Kuntala mandal. Quantitative data were analyzed via descriptive statistics and chi-square tests using SPSS version 26, while qualitative data were coded thematically using NVivo. Ethical protocols were strictly followed: informed consent was obtained from all participants, anonymity was guaranteed, and the study was approved by the Institutional Ethics Committee (reference IEC-2024/112).

Empirical Findings

The empirical results are organized thematically, beginning with the demographic profile of respondents. Of the 400 respondents, 62% were female, reflecting that women are the primary ration collectors, while 38% were male. In terms of social composition, 45% belonged to Scheduled Tribes (ST), 28% to Scheduled Castes (SC), and 27% to Other Backward Classes (OBC). The average household size was 5.2 persons, and 71% of respondents had only primary education or less.

Regarding awareness and entitlement knowledge, the survey revealed that 88% of respondents knew their card type, whether PHH or AAY. However, only 52% knew the exact quantum of rice entitled per month, which is 5 kilograms per unit for PHH households and 35 kilograms per household for AAY beneficiaries. Price awareness was high, with 96% correctly stating the rice price as Re. 1 per kilogram. However, a striking finding was that 79% of respondents were unaware that sugar, pulses, or fortified grains are supposed to be distributed under the integrated scheme. In practice, only rice was consistently available in Nirmal.

Accessibility and physical barriers posed significant challenges. The average distance to the nearest fair price shop was 1.8 kilometers. In Kuntala mandal, 34% of beneficiaries traveled more than 5 kilometers, often on foot due to lack of bus connectivity. The mean waiting time at the shop was 45 minutes, and during peak festival months, waiting time in Soan mandal exceeded two hours. Furthermore, 22% of fair price shops were open fewer than 20 days per month, causing stock accumulation and rushed, erroneous distribution.

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The core findings relate to leakage, rent-seeking, and e-POS dysfunction. The average shortfall in rice received compared to entitlement varied considerably across mandals. In Nirmal urban, the shortfall was 8%, rising to 12% in Lokeswaram, 15% in Soan, and reaching 22% in Kuntala, with an overall average of 14.25%. Beneficiaries reporting bribe demands showed a similar pattern: 4% in Nirmal urban, 11% in Lokeswaram, 18% in Soan, and 31% in Kuntala, averaging 16% overall. e-POS functionality at the time of the last visit was highest in Nirmal urban at 94%, followed by 78% in Lokeswaram, 69% in Soan, and only 52% in Kuntala, giving an average of 73.25%. Dealer substitution of grain quality was reported by 6% in Nirmal urban, 18% in Lokeswaram, 22% in Soan, and 42% in Kuntala, averaging 22% overall. Formal grievance filing was extremely low: 12% in Nirmal urban, 4% in Lokeswaram, 3% in Soan, and only 1% in Kuntala, averaging just 5% across the district.

Two key insights emerge from these findings. First, Kuntala, the tribal mandal, shows the highest shortfall, the highest bribe demand, and the lowest e-POS functionality. This indicates an intersectional vulnerability where remoteness, low literacy, and tribal status magnify rent-seeking. Second, when e-POS fails, dealers revert to manual registers. In 68% of those cases, beneficiaries reported receiving 15-25% less rice than the register showed. This suggests that technology does not eliminate leakage; it merely localizes it to periods of "technical glitch."

Quality and health implications were also significant. Forty-two percent of tribal beneficiaries in Kuntala reported that the rice received had a "musty smell" or contained pebbles. Furthermore, 15% of all respondents sold part of their PDS rice to the open market at prices of Rs. 25 to 30 per kilogram in order to buy coarse grains such as jowar or ragi due to dissatisfaction with quality. This practice subverts the very purpose of the subsidy.

Qualitative interviews with five fair price shop dealers revealed a defensive rationale for their behavior. Dealers reported that state government reimbursements are delayed by three to four months, forcing them to take loans, and to service debt, they under-weigh grain. They also claimed that for remote mandals like Kuntala, actual transport cost exceeds the fixed allowance, so they "adjust" by keeping a portion of the grain. Additionally, three dealers admitted that local political leaders, such as sarpanches and ward members, demand free rice for their families, which dealers then deduct from general stock.

Theoretical Reassessment in Light of Findings

The empirical findings necessitate a theoretical reassessment in three areas. First, regarding rent-seeking, we observe that it is adaptive rather than static. Krueger's original model assumed rents from quantitative restrictions. In Nirmal, however, we observe qualitative rent-seeking: dealers mix old stock with new, substitute inferior grain, and reduce weight gradually. Moreover, the e-POS creates a new rent opportunity in the form of selling "biometric authentication slots." In one focus group discussion, beneficiaries reported paying Rs. 10 to the dealer to "swipe" their card first; otherwise they were left waiting for hours. Thus, technology digitizes but does not democratize access.

Second, in terms of infrastructural power in frontier districts, Mann's framework explains the variation observed in Nirmal. While Telangana's capital, Hyderabad, has high infrastructural power, the

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periphery, including Nirmal's tribal mandals, suffers from thin infrastructural power. The supply chain from the central FCI godown to the district depot to the fair price shop is broken by several factors: lack of regular vehicle availability during the monsoon season in Kuntala, no cellphone signal for e-POS authentication in 22% of Soan's villages, and weak grievance redressal. The toll-free number was known to only 18% of tribal respondents, and of those who called, 94% received no follow-up.

Third, there is a clear paradox of e-POS performance. The data show that e-POS malfunction is not random; it correlates with tribal density, with a correlation coefficient of 0.67 that is statistically significant at the $p<0.01$ level. This suggests a digital divide within the PDS. Dealers in remote areas deliberately let batteries drain or "lose" the SIM card to avoid biometric authentication, knowing that district officials rarely inspect physically. Computerization without complementary administrative reform reinforces existing power asymmetries.

Discussion

Comparison with state and national averages reveals concerning trends. Telangana's own PDS Performance Dashboard for 2024 claims that 92% of transactions are e-POS authenticated. However, our Nirmal data show only 73.25%. The state average leakage is often cited as 5-7%, yet Nirmal's average shortfall of 14.25% is twice that. This reveals a serious intra-state inequality. Policy accolades based on aggregate data mask severe deprivation in border districts. The question of why beneficiaries do not complain is critical, given that only 5% filed formal grievances. Theoretical explanations include asymmetric information, whereby tribal beneficiaries do not know the entitled quantity or the grievance mechanism. Powerlessness also plays a role: as one Gond farmer stated, "If I complain against the dealer, he will cancel my card. The local sarpanch is his cousin. Who will protect me?" Additionally, chronic under-delivery becomes habituated, with beneficiaries viewing 80% of entitled rice as the "real" quota. This normalization of shortage is a form of adaptive preference formation.

Finally, policy disconnects between universalization and targeting are evident. Telangana has moved towards near-universal PDS, covering approximately 95% of households. However, universalization without decentralized monitoring leads to elite capture. In Lokeswaram, economically better-off households that own tractors still hold ration cards, while some migrant tribal laborers without residential proof in Nirmal are excluded. Thus, the theory of inclusionary policy paradoxically produces exclusionary operational outcomes.

Recommendations

This paper offers several recommendations for different stakeholders. For the state government, specifically the Telangana Civil Supplies Corporation, we recommend three actions. First, in mandals with less than 60% e-POS functionality, mandate weekly physical inspection by a rotating district official, not a local one, using an offline mode with third-party audit. Second, constitute community-based monitoring through Ration Mitra Samitis, or village-level food committees, with 50% women and Scheduled Tribe representation, empowered to weigh grain at the fair price shop on distribution day. Third, implement direct benefit transfer for transport costs, paying actual transport cost based on Google

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Maps distance from depot to fair price shop, thereby eliminating the "transport deficit" excuse for leakage.

For the district administration, specifically the Nirmal Collector, we recommend publishing a monthly "Dealer Scorecard" showing stock received versus distributed, e-POS uptime, and complaints, to be displayed at the Gram Panchayat office and online. Additionally, a mobile grievance van equipped with biometric technology should visit each mandal twice a month, allowing beneficiaries to file complaints without visiting the dealer's shop. For civil society, legal literacy camps conducted by NGOs should target tribal areas, explaining NFSA entitlements and the free legal aid available under the Telangana State Legal Services Authority.

Limitations and Future Research

This study is limited to one district, Nirmal, over a three-month window. Seasonal variation between harvest and lean season likely affects PDS performance. Future research should compare Nirmal with a high-performing district such as Rangareddy using identical methodology. A randomized controlled trial of community monitoring versus e-POS-only control groups would also be valuable. Finally, a political economy analysis asking whether fair price shop dealers in Nirmal with political connections, such as relatives of MLAs, show lower or higher leakage would provide deeper insights.

Conclusion

The Public Distribution System in Telangana's Nirmal District is a tale of two realities: a technologically modern policy on paper and a fragile, rent-seeking laden delivery on the ground. This study empirically demonstrates that e-POS has not eliminated corruption but transformed it, that remote tribal mandals suffer from significantly higher leakage, and that theoretical models of state capacity better explain these variances than simplistic "dealer villain" narratives. The central insight is that the medium is not the message. Digitization is merely a tool. Without infrastructural power, including functioning roads, honest inspectors, community oversight, and grievance redressal that works for the illiterate, the PDS will continue to underperform for the poorest of the poor. Telangana's ambition to be a model welfare state must therefore pivot from software dashboards to soil-level accountability, particularly in districts like Nirmal that border the state's administrative periphery. Only then can the right to food become a reality, not just a slogan.

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