Original Research Article

Public Distribution System: An Exploration of Constraints in Rural and Urban Areas

ABSTRACT

India's Public Distribution System (PDS) plays a critical role in addressing poverty and enhancing food security by providing essential commodities at subsidized rates. Despite its significant contributions, the system faces numerous challenges, including poor quality of food grains, irregular supply, and limited availability of specified items. This study investigates these constraints in Telangana, employing Garrett's ranking technique to evaluate issues faced by beneficiaries across urban and rural areas. Data collected from 240 beneficiaries reveal that poor quality food grains and the non-availability of specified items are the most pressing concerns. The findings emphasize the need for improved quality control, timely supply chain management, and expansion of item availability to enhance the efficacy of the PDS and ensure equitable food security.

Keywords: Food security, food grain quality, nutritional security, poverty alleviation, Public Distribution System (PDS), rural and urban households.

1. INTRODUCTION

Despite more than seventy years of independence, poverty remains a persistent challenge in India. To address this issue, the Government of India has implemented several measures, among which the Public Distribution System (PDS) stands out as a crucial initiative aimed at curbing poverty and enhancing food security (Jacob, 1999; Choudhari, 2003). Introduced during the Second World War as a general entitlement scheme, PDS has evolved over time to better serve vulnerable populations. Initially urban-focused, PDS was extended to rural areas, with significant reforms implemented in 1992 through the Revamped Public Distribution System (RPDS) to improve its reach in remote and inaccessible regions (Rao, 2007). Subsequently, the Targeted Public Distribution System (TPDS) was introduced in 1997 to focus on Below Poverty Line (BPL) households, classifying them further under schemes like the Antyodaya Anna Yojana (AAY) for the poorest of the poor (Kumar, 2010). Managed jointly by the central and state governments, PDS distributes essential commodities such as wheat, rice, sugar, and kerosene at subsidized rates through a network of Fair Price Shops (FPS)

[15-19]. Despite its significance as a key food security network, PDS has faced criticism for urban bias, low-quality food grains, diversion of goods to open markets, and political interference, which undermine its effectiveness in reaching the intended beneficiaries. This study investigates the constraints faced by PDS in Telangana, examining beneficiaries' perspectives to identify areas for improvement and ensure that the system effectively addresses food security needs among the most vulnerable sections of society.

2. METHODOLOGY

2.1 Sampling Procedure

The multi-stage random sampling approach was used to select the respondents. Telangana state is divided into three zones namely Northern Telangana zone (NTZ), Central Telangana zone (CTZ) and Southern Telangana zone (STZ). At the first stage, one district from each zone having highest beneficiaries was selected purposively. The districts were Nizamabad in NTZ, Khammam in CTZ and Rangareddy in STZ. In the next stage two mandals (one with highest number of beneficiaries and other with lowest number of beneficiaries) from the selected district were selected purposively. Later two villages and two urban areas from each mandal were selected. Finally, ten beneficiaries were selected from each selected village and urban areas. Thus, the sample include 120 rural and 120 urbans comprising a total sample of 240 beneficiaries. The data were collected through well-structured and pre-tested personal interviews.

During the pre-testing survey and from the literature, seven problems were identified in receiving PDS entitlements by beneficiaries such as, provision of bold seeded rice or inferior quality grains, distance to FPS, irregularity in monthly issue of entitlements, multiple visits to FPS, public have to spend long hours in queue, improper behaviour of employees and non-availability of items specified under scheme. Constrains faced by the beneficiaries were ranked according to the Garrett's score.

2.2 Garrett's Ranking Technique

Garrett ranking technique (Garrett and Woodworth, 1969) was employed to identify the various constraints, as perceived by the PDS beneficiaries and ranked as per the order of severity of problem. The order of merit assigned by the respondents were converted in to ranks using the formula,

$$\text{Percent position} = \frac{100 \times (R_{ij} - 0.50)}{N_j}$$

Where, R_{ij} stands for rank given for the i^{th} constraint (i= 1, 2……n) by the j^{th} individual (j = 1, 2….. n) and N_j stands for number of constraints ranked by j^{th} individual.

By referring to Garrett's table, the percentage positions estimated were converted in to scores and then for each factor the scores of various respondents were added and mean value was arrived at. These means were arranged in descending order. The problem having the highest mean value was considered as the most important and was given the highest rank and vice versa.

3. RESULTS AND DISCUSSION

3.1 Constraints faced by beneficiaries of the Public Distribution System.

Food security is essential for a country's growth and in a nation like India where one-fifth of the population is believed to be undernourished it becomes even more important. The government of India runs the largest food security programme known as Public Distribution System to ensure food security to the masses. Public Distribution System (PDS) ensures food availability and economic access to the beneficiaries through the Fair Price Shops (FPS) by providing foodgrains to them at fairly cheap prices. People accessing PDS for meeting their dietary needs has increased over the years and hence the food and nutritional security of masses has improved. It has made a positive impact on poverty reduction, income transfer and nutritional security considerably. Despite all these, certain issues like inaccurate identification of beneficiaries, leakages, inadequate storage capacity, and non-viability of Fair Price Shops plague the system (Ghabru *et al*., 2017). The other constraints faced by PDS beneficiaries in rural and urban areas of selected districts in Telangana were identified and prioritised using Garrett ranking technique and discussed in the perusal.

3.2 Constraints faced by PDS beneficiaries in Nizamabad district of NTZ

The table 1 outlines the key constraints associated with the Public Distribution System (PDS) in the Northern Telangana Zone (NTZ), focusing on both urban and rural areas, as well as the aggregated scores for comparison. The constraints are evaluated based on their respective scores and ranks, highlighting their relative impact. These constraints include factors such as distance to Fair Price Shops (FPS), issues of quality with respect to fine variety grains and faulty food grains, irregular supply, multiple visits required to FPS, extended waiting times in queues, improper behaviour of employees, and non-availability of items specified under the

scheme. Notably, the constraint of lack of quality food grains stands out as the major constraint, garnering the highest score and ranking in both urban (GS:60.85) and rural (GS:63.55) areas.

The second most important constraint faced by urban beneficiaries was multiple visit to FPS (GS:59.70) where the stock would not reach the FPS on regular dates such as first week of month as sometimes it may extend to second or third week followed by third ranked constraint was non-availability of items specified under scheme (GS:56.85) where only rice was distributed and often sometimes wheat but beneficiaries were awaiting to receiving other non-grain commodities such as sugar, pulses, oil etc., at subsidized prices followed by public have to spend long hours in queue as fourth (GS:55.00) and irregular supply of stock to FPS as fifth, where in case of rural and overall sample the constraint non-availability of items specified under scheme was ranked as second and multiple visits to FPS as third followed by irregular stock supply days to FPS as fourth and public to spend long hours in queues as fifth. The constraints distance to FPS and improper behaviour of employees were identified constraints in both rural and urban areas but these were ranked as sixth and seventh in both rural and urban showing least prominent constraints among the seven identified constraints.

Table.1 Constraints faced by PDS beneficiaries in NTZ

Constraints	NTZ Urban (n=40)		NTZ Rural (n=40)		NTZ (Pooled) (N=80)	
	Garett Score	Rank	Garett Score	Rank	Garett Score	Rank
Distance to FPS	43.23	6	43.95	6	43.59	6
Lack of quality rice	60.85	1	63.55	1	62.20	1
Irregularity in monthly inventory	51.08	5	54.08	4	52.58	4
Multiple visits to FPS	59.70	2	55.03	3	57.36	3
Public have to spend long hours in queue	55.00	4	45.45	5	50.23	5
Improper behaviour of employees	23.30	7	25.95	7	24.63	7
Non-availability of items specified under scheme	56.85	3	62.00	2	59.43	2

3.3 Constraints faced by PDS beneficiaries in Khammam district of CTZ

The outcomes of the constraints faced by the beneficiaries of PDS in Khammam district of CTZ were shown in Table 2. The results that among the seven identified problems in availing entitlements, non-availability of items specified under the scheme was the main problem identified by the majority of the PDS beneficiaries which shared the highest Garett score in

both rural and urban areas, 64.60 in urban, 68.48 in rural and for pooled sample of rural and urban (66.54) ranked I, followed by receiving poor quality foodgrains with Garett score 63.31 (rank II), multiple visits to FPS (III), irregular supply of stock to FPS (IV) and the least concerned constraint among the seven identified constraint was improper behaviour of employees (GS: 24.93).

Table.2 Constraints faced by PDS beneficiaries in CTZ

Constraints	CTZ Urban (n=40)		CTZ Rural (n=40)		CTZ (Pooled) (N=80)	
	Garett Score	Rank	Garett Score	Rank	Garett Score	Rank
Distance to FPS	43.03	6	45.10	5	44.06	6
Lack of quality rice	61.60	2	65.03	2	63.31	2
Irregularity in monthly inventory	48.85	4	49.30	4	49.08	4
Multiple visits to FPS	57.58	3	53.00	3	55.29	3
Public have to spend long hours in queue	48.83	5	44.78	6	46.80	5
Improper behaviour of employees	25.53	7	24.33	7	24.93	7
Non-availability of items specified under scheme	64.60	1	68.48	1	66.54	1

Table.3 Constraints faced by PDS beneficiaries in STZ

Constraints	STZ Urban (n=40)		STZ Rural (n=40)		STZ (Pooled) (N=80)	
	Garett Score	Rank	Garett Score	Rank	Garett Score	Rank
Distance to FPS	34.20	6	32.33	6	33.26	6
Lack of quality rice	74.05	1	72.28	1	73.16	1
Irregularity in monthly inventory	43.58	5	49.88	5	46.73	5
Multiple visits to FPS	52.55	4	50.93	3	51.74	4
Public have to spend long hours in queue	54.78	3	50.28	4	52.53	3
Improper behaviour of employees	23.85	7	23.93	7	23.89	7
Non-availability of items specified under scheme	67.00	2	70.40	2	68.70	2

3.4 Constraints faced by PDS beneficiaries in Rangareddy district of STZ

The outcomes of the constraints faced by the beneficiaries of PDS were shown in Table 3. the results that among the seven identified problems in availing entitlements, receiving of poor quality foodgrains was the revealed main problem identified by the majority of the PDS beneficiaries which shared the highest Garett score (73.16) followed by Non-availability of items specified under scheme (GS: 68.70) for both rural and urban PDS beneficiaries, multiple

visit to FPS (GS: 55.29) was the third most important constraint in rural (GS:50.93) whereas in urban, public spending long hours in queue (GS:54.78) was the third most important constraint similar to the overall sample. Irregular supply of stock to FPS (46.73), distance to FPS (GS:33.26) and improper behaviour of employees (GS: 23.89) were ranked as fifth, sixth and seventh ranked constraints respectively. The results are in line with the study conducted by Velmurgan and Lavanya (2017) in Coimbatore district of Tamil Nadu reported that the fair price shops were found over crowded, public had to spend two to three hours for buying goods at PDS, non availability of new stock etc.

Table.4 Constraints faced by PDS beneficiaries in Telangana

	TS Urban (n=120)		TS Rural (n=120)		TS (Pooled) (N=240)	
Constraints	Garett Score	Rank	Garett Score	Rank	Garett Score	Rank
Distance to FPS	40.15	6	40.46	6	40.30	6
Lack of quality rice	65.50	1	66.95	2	66.23	1
Irregularity in monthly inventory	47.83	5	51.08	4	49.46	5
Multiple visits to FPS	56.61	3	52.98	3	54.80	3
Public have to spend long hours in queue	52.87	4	46.83	5	49.85	4
Improper behaviour of employees	24.23	7	24.73	7	24.48	7
Non-availability of items specified under scheme	62.82	2	66.96	1	64.89	2

3.5 Constraints faced by PDS beneficiaries in Telangana

The table 4 summarizes the constraints faced in the Telangana Public Distribution System (PDS) across different regions: urban, rural, and a pooled perspective. The constraints were evaluated using Garett Scores, with corresponding ranks assigned to each constraint.

The most prominent constraint, identified by the highest score and top rank, is the lack of quality rice or supply of inferior quality food grains, which scores 65.50 for urban, 66.95 for rural, and 66.23 for the pooled category, securing the first rank across all. Consumers in rural areas to some extent accept the PDS foodgrains despite of their inferior quality every month and however used for self-consumption due to their social status whereas in urban areas, for few months the quality of foodgrains are inferior quality claiming non-suitable for direct consumption and using them as processed (flour) form or involving in the resale of foodgrains according to the quality they receive. The next major constraint reported was non-availability of items specified under the scheme which score 62.82 for urban, 66.96 for rural, and 64.89 for pooled, securing the second rank for urban and pooled sample whereas in rural scenario, it is

major concern that consumers were willing to avail the other goods such as wheat, sugar, oil etc., for subsidised prices but there is no supply of these items. Multiple visits to FPS present a notable challenge, with urban, rural, and pooled scores of 56.61, 52.98, and 54.80, respectively, positioning it at third place that the foodgrains stock arriving to the FPS at irregular days in a month which causes the beneficiaries to visit multiple times and also when the que is large, consumers weren't availing their entitlements due to work hours and had to visit other day. The need for the public to spend long hours in queues is also a significant concern, with scores of 52.87 for urban, 46.83 for rural, and 49.85 for pooled, ranking it at 4th place. Regarding irregular supply, both urban and pooled areas are relatively worse off with scores of 47.83 and 49.46, respectively, ranking at fifth place, while rural areas score slightly higher at 51.08, placing fourth. When it comes to the distance to Fair Price Shops (FPS), all regions share similar challenges, with urban, rural, and pooled scores of 40.15, 40.46, and 40.30, respectively, ranking at sixth place. Finally improper behaviour of employees is identified as a constraint, but it ranks relatively lower in significance, with scores of 24.23 for urban, 24.73 for rural, and 24.48 for pooled, placing it at seventh place.

The results were in compliant with several studies, Bhat and Hussain (2012) and Kour (2014) in their study reported that the goods supplied at PDS shops are of inferior quality and goods are not supplied in time to beneficiaries. Other studies such as Mahendran (2013), Sawant and Jadhav (2013) and Kumar and Naveena (2014) reported that the various obstacles that exists at Public Distribution System were poor quality of goods supplied, weight cutting, leakage of Public Distribution System commodities to open market, non-availability of commodities etc. As highlighted by Jha et al., (2013), careful attention must be given to reducing transaction costs, such as long distances to be travelled, long queues, waiting periods, and under-weighing by FPS. Establishing a better network of fair price shops, providing higher margins, and ensuring adequate supplies would significantly enhance the cost-effectiveness and reach of the Public Distribution System (PDS).

4. CONCLUSION

The Public Distribution System in Telangana is a cornerstone of food security for rural and urban households, yet persistent constraints undermine its effectiveness. Key challenges identified include inferior quality food grains, non-availability of essential items (other than rice), and logistical issues such as irregular supply and extended waiting times. The Telangana Public Distribution System (PDS) faces multiple challenges, including poor grain quality, non-availability of essential items, multiple visits to Fair Price Shops (FPS), long queues, and

irregular supply. Leveraging technology offers a comprehensive solution to address these constraints and enhance system efficiency. Digital monitoring and grading systems at procurement centers and FPS can ensure the distribution of food grains that meet quality standards, while blockchain technology can provide transparency by tracking the journey of grains from procurement to distribution, reducing adulteration and leakages. Additionally, AI-driven demand forecasting and real-time inventory management systems can help align supplies with demand, minimizing stock gaps and ensuring timely delivery. To improve beneficiary experience, mobile apps or SMS-based notification systems can inform users about their entitlements, reducing unnecessary visits, while GPS-enabled tracking and advanced logistics tools can optimize supply chains to prevent irregularities in supply. Drawing from successful implementations in states like Tamil Nadu's smart card system and Chhattisgarh's GPS-enabled tracking (Kumar, 2017), Telangana can adopt similar technology-driven reforms, including automated fortification of grains, to create a more transparent, efficient, and inclusive Public Distribution System (PDS), can more effectively meet its goal of ensuring food security and equitable access for all.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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