Journal of Supply Chain Management Systems
13 (2) 2024, 12-19
http://publishingindia.com/jscms/

The Performance of Public Distribution System in District Jind of Haryana: A Case Study of Dhigana Village, a Significant Microcosm of the Larger PDS Landscape

Tisha*, Ajay Kumar**

**Student of M.A., Department of Geography, Panjab University, Chandigarh, India.*
Email: tishaduhan00@gmail.com

***Guest Faculty, Department of Geography, Panjab University, Chandigarh, India.*
Email: ajayberdhan@gmail.com

Abstract

The Public Distribution System (PDS) in India, originating from the Bengal famine of the 1940s, is a key tool in the fight against poverty and food insecurity. It aims to provide subsidised essentials to economically vulnerable groups. Revived in the 1960s and expanded through reforms like the Targeted Public Distribution System (TPDS) in 1997 and the National Food Security Act in 2013, the PDS ensures food security and poverty alleviation by offering affordable commodities. Implementation varies by state, incorporating Aadhaar linkage and Direct Benefit Transfer to reduce leakages and enhance transparency. This study examines Haryana's PDS, with a primary focus on the performance of the PDS in Dhigana village of district Jind. Haryana state is recognised for agricultural productivity yet facing significant poverty, resulting in heavy reliance on the PDS. Haryana has digitised TPDS operations to improve efficiency and accessibility with Aadhaar-enabled systems and online grievance redressal. Challenges persist, including access issues and beneficiary concerns about efficiency. While crucial for food security and price stability, the PDS faces logistics, quality control and access challenges, especially for green cardholders. Addressing these issues is essential to optimise the PDS's impact and foster socio-economic development in Haryana and nationwide. A few recommendations have been made to cope with the highlighted issues, which include infrastructure enhancement, community engagement, quality control, capacity building, and integration with other welfare schemes, regular shop opening and establishment of more Food Price Shops.

Keywords: Public Distribution System, Fair Price Shop, Direct Benefit Transfer, Transparency, Poverty, Food Security, Haryana

Introduction

The Public Distribution System (PDS) in India is a government initiative designed to provide subsidised food and non-food items to economically disadvantaged groups, ensuring food security and reducing poverty. Introduced during the 1940s Bengal famine and revived in the 1960s due to severe food shortages, the PDS aims to make essential commodities like rice, wheat, sugar and kerosene available at affordable prices through Fair Price Shops (FPS). This system stabilises vital commodity prices, prevents hoarding and maintains a steady supply to those in need. Devi and Rathod (2016) emphasise the importance of India's PDS in ensuring food security, noting challenges like inefficiencies and subsidies and calling for continued reforms and political commitment to improve the system.

The creation of the Food Corporation of India and the Agricultural Prices Commission in 1965 further bolstered the PDS. In 1997, the Targeted Public Distribution System

(TDPS) was launched to focus on the poor, followed by the Antyodaya Anna Yojana in 2000, targeting the poorest Below Poverty Line households. The 2013 National Food Security Act made the right to food legally enforceable. Lagad, Phule and Charkha (2023) evaluate beneficiary satisfaction with the EPOS in India's PDS, noting that factors like reliability, ease of use, transparency and service quality significantly impact overall satisfaction. The PDS has been reformed to enhance efficiency and transparency, incorporating Aadhaar card linkage and direct benefit transfer mechanisms to reduce leakages and ensure benefits reach the intended recipients.

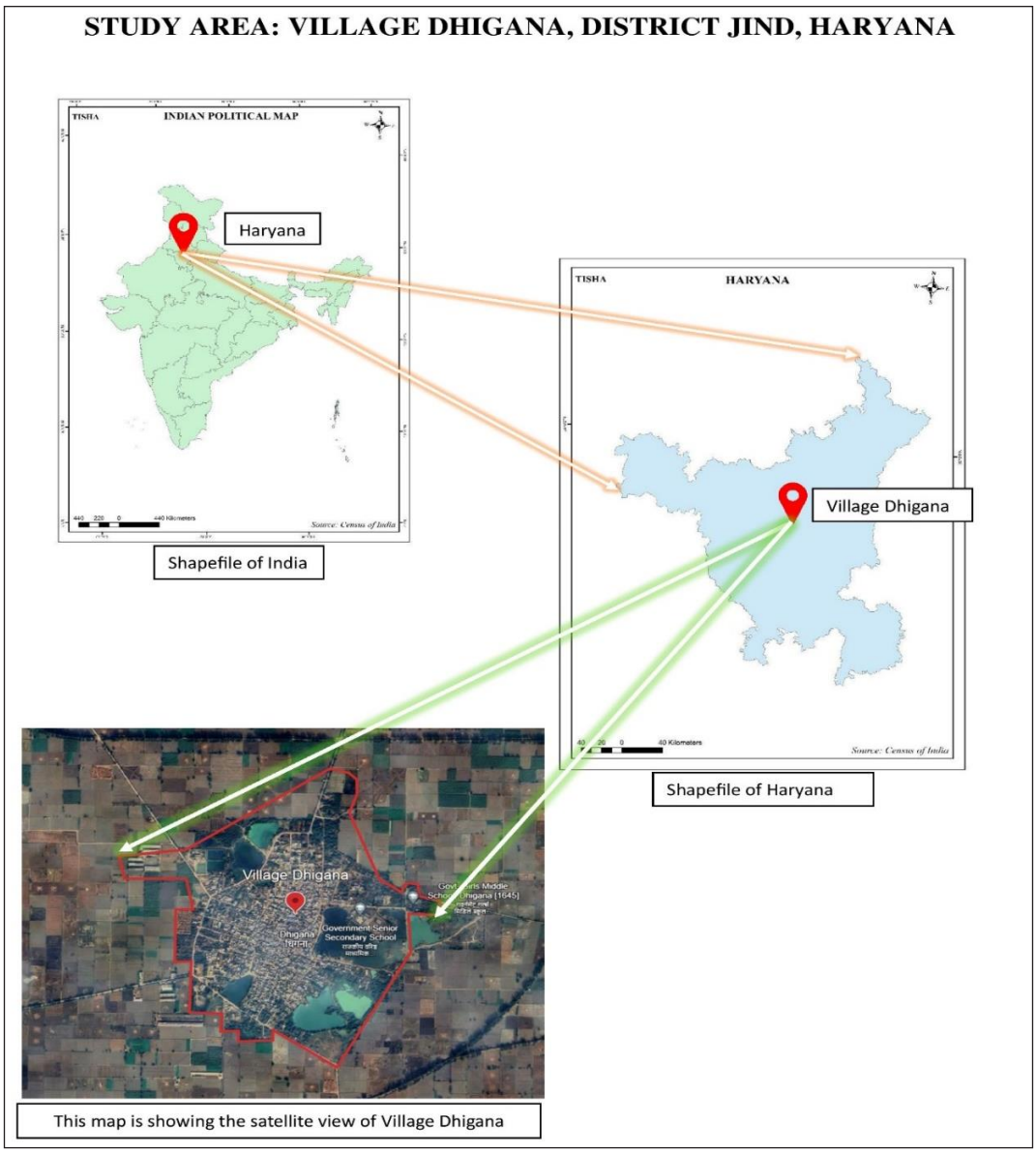
PDS is critical in price stability, providing price support to farmers, making grains affordable through distribution and maintaining buffer stocks. The system's effectiveness depends on the combined efforts of the central and state governments, with the central government managing procurement, storage and supply. In contrast, state governments handle distribution to retail outlets. This collaboration results in regional variations in PDS performance, as highlighted by previous studies. Howes and Jha (1992) find that urban residents benefit more from India's PDS than rural residents, noting biases in grain consumption and subsidies but acknowledging data and methodological limitations in their analysis.

Haryana, known as the "breadbasket" of India, is an agriculturally dominant state that significantly contributes to the nation's wheat and rice supply. Despite being self-sufficient in food production, over 40% of the population relies on the PDS to meet their food needs. The state has nearly completed the "end-to-end computerisation" of TPDS operations, which includes online ration card management, supply chain management and ration distribution through an Aadhaar-enabled system. Haryana also offers online grievance redressal and has 2,700,365 ration cards and 9,591 fair price shops covered by e-PDS. The present study evaluates Haryana's PDS, focusing on the performance of the PDS in Dhigana village, Jind district. Some suggestions have also been made to address the identified challenges, including infrastructure improvements, community engagement, quality control, capacity building, integration with other welfare systems, regular shop openings and establishing more food price shops.

Study Area

The present study focuses on Dhigana village in the Jind district of Haryana. Jind, one of Haryana's 22 districts, is historically significant and among the oldest in the state. According to legend, the Pandavas built a temple for Jainti Devi, the goddess of victory and sought blessings before battling the Kauravas. This temple gave rise to the town of Jaintapuri, now known as Jind. Located about 125 km from Delhi, Jind spans an area of 3,606 square kilometres and lies on the Delhi-Ferozpur rail route. Geographically, Jind is centrally positioned in Haryana, bordered by Panipat, Karnal and Kaithal to the east and northeast and it shares boundaries with Punjab's Patiala and Sangrur districts to the north. Hisar and Fatehabad lie to its west and southwest, while Rohtak and Sonipat are to its south and southeast. According to the 2011 census, Jind had a population of 166,225, with males constituting 53.3% and females 46.7%. The sex ratio was 877, below the national average of 940 and the primary languages spoken are Haryanvi, Hindi and Punjabi.

Dhigana village, part of Julana tehsil, is 18 km east of Jind, 10 km from Julana and 199 km from Chandigarh. Positioned at 226 meters above sea level, it borders Rohtak district. The village covers an area of 1,491 hectares and has a population of 4,882, with 2,631 males and 2,251 females. The literacy rate in Dhigana is 58.25%, with male literacy at 67.24% and female literacy at 47.76%. The village comprises approximately 985 households, with Hindi being the predominant language.



Source: Goggle Earth, Arc G.I.S.

Map 1: Location of Study Area

Review of Literature

Zhong and Zhu (2017) highlight China's focus on grain security, evolving import patterns and the need for balanced food security policies. Costanza (2013) describes food security as a global challenge affecting millions and emphasises the need for sustainable agricultural systems and support for small farmers, particularly in Africa. Zhou and Wan (2006) compare India and China's PDSs, suggesting mutual learning to improve food security and recommending gradual adjustments as income levels rise. Godfray and Robinson (2015) highlight past reliance on technology for food security and suggest that current uncertainties necessitate collaboration between statistical and economic modelling to inform policymaking better. Khera (2011) estimates PDS grain diversion in India, noting high leakage peaks in 2004-05 but improvements by 2007-08, with state-level variations highlighting "functioning," "reviving," and "languishing" states. Kochar (2005) examines India's shift from universal entitlements to targeted PDS benefits. While targeted programmes save costs, they may reduce support and

effectiveness, suggesting regional targeting could better aid impoverished areas. George (1984) discusses India's PDS, which redistributes income through market price support and subsidies but faces targeting challenges and fluctuating supply, necessitating sustainable strategies for fair price shop operations. Dutta and Ramaswami (2001) compare Andhra Pradesh's and Maharashtra's PDS, noting AP's broader coverage and better subsidy distribution for the poor compared to Maharashtra's inefficient targeting, advocating for operational efficiency improvements and exploring alternative subsidy distribution methods. Despite narrowing state gaps, Naik (2009) highlights Orissa's stagnant Human Development Index, emphasising the PDS's role in Kashipur amidst corruption and bureaucratic challenges, perpetuating socio-economic disparities. Bohtan A. (2017) uses a hybrid SWOT-AHP method to analyse the strengths, weaknesses, opportunities and threats in India's PDS supply chain. It highlights the importance of ICT solutions for enhancing supply chain efficiency and effectiveness. Singhal et al. (2016) ascertain that developing an efficient supply chain management system for food distribution is crucial for ensuring food security in India. Despite surplus food stocks, operational inefficiencies hinder reaching the targeted population, necessitating an integrated distribution policy. Kumar (2021) examines the potential of blockchain technology in improving the Indian PDS's supply chain. It highlights blockchain's ability to reduce pilferage, ghost demand and improve inventory visibility and efficiency. Larson (2009) compares public and private sector procurement professionals' perspectives on supply chain management (SCM), revealing narrower views and differing priorities in the public sector. Perdana et.al. (2022) review food supply chain (FSC) management during disasters, highlighting research gaps in humanitarian FSC, policy implications, OR/MS methods and big data. It recommends further exploration of perishable and cold FSC risks. Bhatia et al. (2020) develop a mathematical model to optimise farm revenue by managing production and logistics of perishable crops, considering market demand, transportation, packaging and storage to reduce costs and minimise product loss. Mooij (1998) explores the evolution of India's PDS since 1939, noting its adaptation through various phases. It highlights the tension between economic rationalisation and populist politics and argues for increased public action to ensure effective food distribution and accountability. Ramaswami et al. (2002) examine how inefficiencies in state-run wheat subsidies in India impact food prices. It finds that while reduced subsidies raise market prices, this effect is exacerbated by the lower quality of public grain. Combining subsidy cuts with procurement reforms could mitigate price increases. Jha et al. (2013) ascertains that the TPDS in India has failed to effectively reach the poor. This study evaluates its performance in Andhra Pradesh, Maharashtra and Rajasthan, finding that real income transfers are minimal and suggesting that a universal food subsidy would exacerbate current inefficiencies. Instead, the study advocates for overhauling the existing system. Nagavarapu et al. (2016) explore how social networks can enhance monitoring and enforcement in India's TDPS. It finds that caste-based networks improve access to grains for Scheduled Castes but not to fuel. Lowering monitoring costs yields significant welfare gains, though expanding the programme's generosity may reduce take-up. Tanksale et al. (2015) discuss that the National Food Security Act aims to improve food security in India by addressing lifecycle needs and empowering vulnerable groups. However, challenges like resource limitations and PDS inefficiencies highlight the need for comprehensive reforms and better operational strategies.

Objectives

- To study the socio-economic conditions of the population in Dhigana village, Jind.
- To evaluate issues related to access, utilisation and perception of PDS among beneficiaries.
- To analyse the benefits, effectiveness and shortcomings of PDS in the study area.

Data Sources and Research Methodology

The present study on PDSs is based on primary and secondary data sources. Simple random sampling was used to conduct this research. Personal discussions and interview schedules with people in the undertaken study region collect the primary data. The sample size was confined to 70 respondents. The secondary data was collected from books, journals, magazines, newspapers, periodicals, reports and websites. Data processing has been done based on various quantitative techniques, representing the statistical processing of data. The data has

been described as tables, plates and charts. A descriptive approach has also been used in the present study.

Results and Discussion

Based on the survey of socio-economic conditions of the study area population, most of the surveyed households had 3–6 members. The majority of households were below the poverty line. The literacy rates of the male and female populations were below the state averages for the corresponding categories. The majority of households surveyed had an annual income of less than 2 lakh and most of the working population surveyed were engaged in primary activities. Only 32.8% had health insurance coverage, which is again low and there are frequent cases of medical treatment delays due to lack of money and the high cost of medical treatments. Furthermore, the lack of financial security is also prevalent and indebtedness is also high. Most of the outstanding loans were from non-institutional sources by the commission agents, followed by some sources like Krishi cards and nationalised banks, public sector banks, cooperative societies, etc. Overall, the socio-economic condition of the village has been highlighted with the help of selected household samples.

Source: Primary field survey with a questionnaire at Dhigana Village, Jind (Haryana) 2024.

Plate 1: Group Discussion during Survey

Then, it has been tried to evaluate the issues related to access to PDS and its utilisation by the beneficiaries. Firstly, the functioning of PDS in Haryana is operated jointly by the central and state governments. It has been found that the government of Haryana issues three types of ration cards based on different criteria, as shown in Table 1 below.

Table 1: Types of Ration Card Owned

Types of Ration Card	Number of Respondents	Number of Respondents (%)
Pink card (annual household income less than 80,000)	20	28.5%
Yellow card (annual household income 80,000-1,80,000)	31	44.2%
Green card (annual household income above 1,80,000)	19	27.1%
Total	70	100%

Source- Primary field survey, 2024.

Furthermore, the distance of surveyed households from the nearest PDS outlet has been computed. It has been found that most of the households are 1-2 km from the shop and the least number of respondents covered more than 2 km. Most of the beneficiaries come on foot to purchase the commodities. To add more, according to the rule, the beneficiary can get the ration only once a month.

Items Purchased from PDS Outlet

It is different for different types of ration card holders. Generally, three commodities are distributed through FPS: wheat, sugar and cooking oil. In winters, Bajra is also distributed with wheat; one can take either of them. During the COVID-19 pandemic, many essential items were distributed along with these, like salt, pulses, etc.

Table 2: List of Items Purchased

Types of Cards	Wheat (Per Month)	Price of Wheat	Sugar (Per Month)	Price of Sugar	Cooking Oil (Per Month)	Price of Cooking Oil
Pink card	35 kg per card	Free	1 kg	14 rupees/kg	1 bottle	20 rupees per bottle
Yellow card	5kg per member	Free	1 kg	14 rupees/kg	1 bottle	20 rupees per bottle
Green card	Nil	Nil	Nil	Nil	Nil	Nil

Source: Primary field survey with questionnaire at Dhigana Village, 2024.

If the perception of the PDS among beneficiaries is considered, it varies significantly. While some appreciate its role in providing subsidised food grains, others criticise its inefficiency, citing issues like corruption, quality concerns and limited availability. Despite mixed views, many rely on PDS for basic sustenance, especially in rural areas and low-income households. Improving transparency, addressing logistical challenges and ensuring better quality control could enhance its acceptance and effectiveness among beneficiaries. The effectiveness of the PDS is perceived differently among beneficiaries. While some praise its role in providing essential food items to those in need, others express reservations regarding its efficiency and coverage. The divergent viewpoints emphasise the importance of continual assessment and potential reforms to optimise the PDS's ability to ensure widespread food security.

Source: Primary field survey with questionnaire at Dhigana Village, 2024

Plate 2: A View of Storage House of FPS

Source: Primary field survey with questionnaire at Dhigana Village, 2024

Plate 3: Use of Biometric System in FPS

The benefits derived from the PDS system and its shortcomings have been assessed. The PDS in Dhigana village, Jind, Haryana, offers crucial benefits. It ensures food security by subsidising essential food items like rice

and wheat, improving nutrition and alleviating hunger. PDS stabilises food prices, easing financial burdens for low-income families. Additionally, it fosters economic stability, as reduced food expenses free up resources for other necessities. Moreover, PDS enhances social cohesion by promoting equitable access to food resources, contributing to community well-being. Shortcomings of PDS include poor quality of distributed items, inadequate infrastructure leading to logistical challenges, insufficient quantity provided to beneficiaries, limited availability with only one ration shop, long waiting lines due to staffing issues and irregular opening hours, causing inconvenience to residents and hindering their access to essential food items.

Conclusion and Recommendations

The analysis of the PDS system in Dhigana village of Jind (Haryana) reveals several key findings. Firstly, the socio-economic conditions of the population under the study area were studied under several parameters, notably age structure, educational status, household income, employment status, access to healthcare and a few more. Overall, the economy of Dhigana is mostly dependent on primary activities and the education and health sectors need a lot of improvements. The lack of financial security is also prevalent and indebtedness is high.

Secondly, issues related to access and utilisation of PDS was evaluated. The distribution of types of cards has been shown under the headings of pink, yellow and green ration cards with their respective benefits. The items distributed include wheat, sugar and cooking oil. Sometimes, Bajra and pulses are also distributed. These items are only for pink and yellow ration card holders. Green ration card holders get no benefits from it and beneficiaries can get the ration only once a month.

Thirdly, the effectiveness and perception of the PDS among beneficiaries have been assessed. The perception of the PDS among beneficiaries varies. While some appreciate its role in providing subsidised food grains, others criticise its inefficiency, citing issues like corruption, quality concerns and limited availability.

Lastly, an analysis of the PDS reveals its key benefits and drawbacks. PDS enhances food security, improves nutrition and reduces hunger while stabilising food prices to support low-income families. It also promotes economic stability and social cohesion. However, the system has significant issues: poor food quality, inadequate infrastructure, limited availability at only one ration shop, long waiting times due to staffing problems and irregular hours. These shortcomings inconvenience residents and limit their access to essential food items.

Improving the PDS in a village like Dhigana, Jind, involves several key enhancements. Firstly, infrastructure improvements are essential, including better storage facilities to prevent spoilage and adequate transportation for timely delivery. Digitalisation is crucial, with the implementation of digital ration cards, a central database to track inventory and mobile apps for transparency and accessibility. Training programmes for staff on inventory management, customer service and digital tools are necessary for capacity building. Establishing an additional FPS is essential, as the village currently has only one, causing difficulties for both beneficiaries and distributors. Additionally, the current distribution period of one week per month leads to long waiting lines, so more regular shop openings are needed. Community engagement through outreach programmes can educate beneficiaries about their entitlements and rights. Accurate targeting of beneficiaries using technology can prevent leakages; ensuring resources reach those in need. Finally, integrating the PDS with other welfare schemes, such as healthcare and education, would provide comprehensive support for beneficiaries. Implementing these recommendations requires collaboration among government agencies, local authorities, community organisations and beneficiaries.

References

Bhatia, M., & Bhat, G. M. J. (2020). Agriculture supply chain management: An operational perspective. *Brazilian Journal of Operations & Production Management, 17*(4), 1-18. doi:https://doi.org/10.14488/BJOPM.2020.v17.n4.a1

Bohtan, A., Vrat, P., & Vij, A. K. (2017). Supply chain of the Indian public distribution system: A new paradigm. *Journal of Advances in Management Research, 14*(1), 110-123. doi:https://doi.org/10.1108/JAMR-10-2015-0073

Dutta, B., & Ramaswami, B. (2001). Targeting and efficiency in the public distribution system: Case of Andhra Pradesh and Maharashtra. *Economic and Political Weekly, 36,* 1524-1532. doi:https://doi.org/10.2307/4410577

Drèze, J., & Khera, R. (2015). Understanding leakages in the public distribution system. *Economic and Political Weekly, 50*(7), 39-42. Retrieved from http://www.jstor.org/stable/24481393

George, P. S. (1984). Some aspects of public distribution of foodgrains in India. *Economic and Political Weekly, 19*(39), A.106-A.110.

Howes, S., & Jha, S. (1992). Urban bias in Indian public distribution system. *Economic and Political Weekly, 27*(19), 1022-1030. Retrieved from http://www.jstor.org/stable/4397865

Jha, R., Gaiha, R., Pandey, M. K., & Kaicker, N. (2013). Food subsidy, income transfer and the poor: A comparative analysis of the public distribution system in India's states. *Journal of Policy Modeling, 35*(6), 887-908. doi:https://doi.org/10.1016/j.jpolmod.2013.06.005

Khera, R. (2008). Access to the targeted public distribution system: A case study in Rajasthan. *Economic and Political Weekly, 43*(44), 51-56. Retrieved from http://www.jstor.org/stable/40278129

Kochar, A. (2005). Can targeted food programs improve nutrition? An empirical analysis of India's public distribution system. *Economic Development and Cultural Change, 54*(1), 203-235. doi:https://doi.org/10.1086/431281

Kumar, A. (2021). Improvement of public distribution system efficiency applying blockchain technology during pandemic outbreak (COVID-19). *Journal of Humanitarian Logistics and Supply Chain Management, 11*(1), 1-28. doi:https://doi.org/10.1108/JHLSCM-12-2020-0166

Lagad, M., Charkha, S., & Professor, A. (2023). *A study of the level of satisfaction among beneficiaries regarding the implementation of the electronic point of sale (EPOS) system in the public distribution system (PDS) in Osmanabad District.*

Larson, P. D. (2009). Public vs. private sector perspectives on supply chain management. *Journal of Public Procurement, 9*(2), 222-247. doi:https://doi.org/10.1108/JOPP-09-02-2009-B002

Mooij, J. (1998). Food policy and politics: The political economy of the public distribution system in India. *The Journal of Peasant Studies, 25*(2), 77-101. doi:https://doi.org/10.1080/03066159808438625

Nagavarapu, S., & Sekhri, S. (2016). Informal monitoring and enforcement mechanisms in public service delivery: Evidence from the public distribution system in India. *Journal of Development Economics, 121,* 63-78. doi:https://doi.org/10.1016/j.jdeveco.2015.11.001

Naik, I. C. (2009). Problems of public distribution system: A case study of Kashipur Block in Orissa. *Indian Anthropologist, 39*(1/2), 145-153. Retrieved from http://www.jstor.org/stable/41920096

Perdana, T., Onggo, B. S., Sadeli, A. H., Chaerani, D., Achmad, A. L. H., Hermiatin, F. R., & Gong, Y. (2022). Food supply chain management in disaster events: A systematic literature review. *International Journal of Disaster Risk Reduction, 79*, 103183. doi:https://doi.org/10.1016/j.ijdrr.2022.103183

Prakash, A., & Masiero, S. (2015). Does computerisation reduce PDS leakage? Lessons from Karnataka.

Ramaswami, B., & Balakrishnan, P. (2002). Food prices and the efficiency of public intervention: The case of the public distribution system in India. *Food Policy, 27*(5-6), 419-436. doi:https://doi.org/10.1016/S0306-9192(02)00047-7

Singhal, P., Agrawal, R., & Sharma, V. (2016). Significance of supply chain management in public distribution system. *Journal of Supply Chain Management Systems, 5*(1), 27-32.

Tanksale, A., & Jha, J. K. (2015). Implementing national food security act in India: Issues and challenges. *British Food Journal, 117*(4), 1315-1335. doi:doi:https://doi.org/10.1108/BFJ-10-2014-0360

Umari, S., Kumar, R., & Kumari, S. (2023). Public distribution system of Bihar. *Journal of Business Management and Information Systems, 10*(1), 10-15. doi:https://doi.org/10.48001/jbmis.2023.1001003

Zhang, X., Wang, Y., Bao, J., Wei, T., & Xu, S. (2022). Research on the evaluation of China's food security under the perspective of sustainable development - Based on an entropy weight TOPSIS model. *Agriculture, 12,* 1926. doi:http://doi.org/10.3390/agriculture12111926

Zhou, Z., & Wan, G. (2006). *The public distribution systems of foodgrains and implications for food security: A comparison of the experiences of India and China.*