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## *Analysis of the Benefits of Digitization of Fair Price Shops under National Food Security Act: A Study of Haryana State*

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*Abstract: The purpose of the research paper is to analyze the benefits of digitization of fair price shops (FPS). For the present study, we collected data from 32 FPS dealers selected from districts of Hisar, Karnal, Panchkula and Charkhi Dadri of Haryana state. We followed the quota and snow-ball sampling methods to draw equal number of respondents from each targeted district for the study. The findings of this study provide that digitization helps in reducing the corruption by FPS dealers and assists in real time stock information with the FPS. Furthermore, the study provides that digitization of FPS helps in reducing the problem of ghost ration cards. Moreover, implementation of digitization of FPSs restricts forged entries of sale to be made by FPS dealers earlier. The findings of this study provide useful implications to various stakeholders.*

*Keywords: PDS, Digitization, Fair Price Shop, forged entries, ghost ration card etc.*

### I. INTRODUCTION

The origin of the Indian Public Distribution System can be traced back to the World War II. In 1944, the government of India established the Indian food security system under the Ministry of Consumer Affairs, Food, and Public Distribution. Ration shops were set up in various locations to supply major items such as sugar, kerosene, and rice. This network is actively controlled by the federal and state governments. The civil service department is in-charge of enforcing the NFSA and ensuring that food grains are distributed properly at the subsidized price. Ration shops may now be found in practically every neighbourhood. In the current situation, achieving sustainable development by eliminating poverty is need of the hour.

The United Nations' newly implemented 2030 Agenda for Sustainable Development holds great hope for a 'generation without hunger'. The public distribution system is also critical for attaining this long-term development. It has progressed significantly over the last few decades. Through the PDS reforms, the government has been successful in bringing about substantial changes overtime. Almost all states have implemented National Food Security Act as a part of the execution of PDS reforms.

Revamped Public Distribution System (RPDS), Targeted Public Distribution System (TPDS), Antodaya Anna Yojana (AAY), separate price levels for APL and BPL cards, e-Pos machines and other initiatives have been implemented by the government. Kerala is well-known for having one of India's first and most successful PDS networks. Its universal coverage and high level of physical access are notable features. The main disadvantage of this method is low grain quality and black selling, but PDS digitization helps to mitigate these issues to a large extent. Hence it is required to analyze the digitalized Public Distribution System and its effectiveness. Therefore, the present study explores the benefits of digitizing of fair price shops. Moreover, Section 2 discuss the review of studies and Section 3 deals with methodology. Section 4 analyzes the data using statistical software.

## II. LITERATURE REVIEW

**Raj (1967)** examined the government's food grain program's effectiveness. The author found that the Public Distribution System met only about 10 per cent of total demand and only a small percentage of the demands of the economically poor. He also discovered that it did not provide significant price relief to the poor. He developed three viable alternative models for the government to use in order to provide a certain level of per capita consumption (These models were the subject of much criticism in the later years). He underlined the significance of establishing a "two market, two price system" and establishing certain criteria for determining the target groups of the programme.

**Taimni (1975)** examined that the process of distributing products and services had clearly gained paramount importance in raising people's living standards. The importance of the retail sector and the PDS could only be disregarded at the risk of the community's well-being. The current PDS lacks any of the necessary characteristics of effectiveness, coverage, or the ability to meet the needs of the people at reasonable costs at all times.

**Verma and Prasad (1990)** evaluated the public distribution and its operational efficiency both in micro and macro settings by gathering samples both from urban and rural areas of Bihar. The micro-level experiences of PDS functioning were highlighted primarily to highlight the rural-urban dichotomy in the system's effectiveness. The investigation also revealed that the PDS' operations had failed to achieve its goal of safeguarding the society's most vulnerable citizens from inflationary pressure. To improve the distribution system, four different rationing methods were proposed: statutory, non-statutory, rural managed, and market stabilization through relief and fair pricing shops.

**Dev (1996)** focused on the subject of poverty and food security, with a focus on PDS. Improved household food security is a pre-requisite for India, according to the report, because vast numbers of impoverished people suffer from chronic hunger and malnutrition. He went on to say that in order to ensure food security to all the poor, the PDS must be implemented effectively.

**Amab et al. (2010)** investigated a number of difficulties related to the operation of PDS. They believed that the scope of PDS should be expanded to include everyone. They also looked into the viability of FPSs, PDS leakage and diversion, off-take difficulties, and the food stamp scheme. Following their analysis, they made comments and recommendations to improve the system's effectiveness.

**Bhushan (2013)** relying on the existing Public Distribution System for food security causes problems because of previous unpleasant experiences with the PDS. The sorrow is owing to PDS's leaky image, which recorded more than 50 per cent of food grain loss in the 2004-05 fiscal year.

**Rahman (2014)** quantified the improvements in the PDS. With relation to the National Food Security Act, he found a significant reform in the functioning of the Public Distribution System. He discovered that states that were far behind, such as Bihar and Jharkhand, have progressed in terms of PDS. It was reported that the coverage and utilization of Public Distribution by Scheduled Castes and Scheduled Tribes has grown over time. Overall, BPL families' consumption of PDS products like as wheat and rice has increased over time.

**Kumar (2014)** used secondary data to examine the efficacy of PDS in India, paying special attention to the role and performance of organizations such as FCI and CWC, which are involved in grain procurement, transportation, storage, and distribution. Kumar examined secondary data from 2007-2008 to 2011-2012. His study found that current grain procurement will be insufficient to meet demand throughout the 12th plan period. He also found that rising procurement prices resulted in higher grain economic costs and, as a result, higher food subsidies. Instead of the existing open ended procurement system, he called for the introduction of a need-based procurement system.

## III. METHODOLOGY

We acquired data from FPS dealers because the goal of this study is to investigate the benefits of digitization of fair price shops. In addition, our study participants hail from the districts of Hisar, Karnal, Panchkula, and Charkhi Dadri. To collect the necessary information, we devised a structured questionnaire that includes statements about the benefits of digitizing fair price shops. To draw an equal number of respondents from each targeted district for the study, we used the quota and snow-ball sampling procedures. We gathered the responses of 32 FPSs dealers for this article. To evaluate the data, we used IBM SPSS V24.

## IV. DATA DISCUSSION

## 4.1. District-wise Distribution of Respondents

Table 1: District of respondents

	Frequency	Percentage
Hisar	8	25.0
Karnal	8	25.0
Panchkula	8	25.0
Charkhi Dadri	8	25.0
Total	32	100.0

Source: The field survey.

Table 1 shows the district-wise distribution of respondents. Equal number of respondents have been taken for the study from each of the selected districts i.e. Hisar (n=8; 25 per cent), Karnal (n=8; 25 per cent), Panchkula (n=8; 25 per cent), and Charkhi Dadri (n=8; 25 per cent).

## 4.2 Benefits of digitization of Fair Price Shops

Table 2: It helps in reducing the corruption by FPS dealers

	Frequency	Percentage
Agree	29	90.6
Strongly Agree	3	9.4
Total	32	100.0

Source: The field survey.

Table 2 shows that 90.6 per cent of respondents are agree and 9.4 per cent are strongly agree with statement “it helps in reducing the corruption by FPS dealers”. Therefore, it obvious that all the respondents agreed that the digitization helped in reducing the corruption.

Table 3: Real time stock information with the FPS can be available

	Frequency	Percentage
Agree	29	90.6
Strongly Agree	3	9.4
Total	32	100.0

Source: The field survey

Table 3 shows that 90.6 per cent of respondents are agree and 9.4 per cent of the respondents are strongly agree with statement “real time stock information with the FPS can be available”.

Table 4: Timely supply of stock to FPS based on the stock availability

	Frequency	Percentage
Agree	31	96.88
Strongly Agree	1	3.12
Total	32	100.0

Source: The field survey.

Table 4 shows that 96.88 per cent of respondents are agree with statement “timely supply of stock to FPS based on the stock availability” followed by 3.12 per cent of respondents are strongly agree with the same statement.

**Table 5: Problem of ghost ration cards will be reduced with digitization of the PDS process**

	Frequency	Percentage
Agree	30	93.75
Strongly Agree	2	6.25
Total	32	100.0

Source: The field survey.

Table 5 shows that 93.75 per cent of respondents are agree and 6.25 per cent of respondents are strongly agree with statement that problem of ghost ration cards will be reduced with digitization of the PDS process.

**Table 6: Sale of excess food grains not purchased by the stakeholders, in open market will get reduced due to real time entries of all the beneficiaries**

	Frequency	Percentage
Neutral	8	25.0
Agree	21	65.6
Strongly Agree	3	09.4
Total	32	100.0

Source: The field survey.

Table 6 shows that 65.6 per cent of respondents are agree and 9.4 per cent of respondents are strongly agree with statement that the sale of excess food grains, not purchased by the stakeholders, in open market will get reduced due to real time entries of all the beneficiaries. 25 per cent of the respondents are neutral with the above statement. In nutshell the diversion of the food grains to the open market will get reduced due to real time entries.

**Table 7: Forged entries of sale by FPS dealers will reduce**

	Frequency	Percentage
Agree	30	93.8
Strongly Agree	2	06.3
Total	32	100.0

Source: The field survey.

Table 7 shows that 93.8 per cent of respondents are agree while 6.3 per cent of respondents are strongly agree with the statement that the forged entries of sale by FPS dealers will reduce.

**Table 8: Gives choice to the beneficiaries to opt any nearby FPS dealers**

	Frequency	Percentage
Agree	32	100.0

Source: The field survey.

Table 8 shows that all the respondents said that it gives choice to the beneficiaries to opt any nearby FPS dealers.

**Table 9: Monopoly of the FPS dealers will reduce**

	Frequency	Percentage
Agree	32	100.0

Source: The field survey.

Table 9 depicts that all of the respondents are agree with statement “monopoly of the FPS dealers will reduce”.

**Table 10: Smart card for ration card holders makes the PDS process transparent**

	Frequency	Percentage
Neutral	1	3.1
Agree	31	96.9
Total	32	100.0

Source: The filed survey.

Table 10 shows that 96.9 per cent of respondents are agree with statement “smart card for ration card holders makes the PDS process transparent” while 3.1 per cent of respondents are neutral to the above statement.

**Table 11: Digitization of records reduces the chances of fuzzy or unverifiable entries**

	Frequency	Percentage
Agree	30	93.8
Strongly Agree	2	6.3
Total	32	100.0

Source: The field survey.

Table 11 shows that 93.8 per cent of respondents are agree and 6.3 per cent of respondents are strongly agree with statement that digitization of records reduces the chances of fuzzy or unverifiable entries.

**Table 12: Maintaining records of PDS process is easy and less time consuming due to digitization**

	Frequency	Percentage
Neutral	1	3.1
Agree	31	96.9
Total	32	100.0

Source: The filed survey.

Table 12 shows that 96.9 per cent of respondents are agree with statement “maintaining records of PDS process is easy and less time consuming due to digitization” followed by 3.1 per cent of respondents are neutral to the statement.

## V. CONCLUSION

This study aims to examine the benefits of digitization of fair price shops. Using the sample of 32 FPSs dealers, the finding of this study provides that digitization helps in reducing the corruption by FPS dealers and assist in real time stock information with the FPS. Furthermore, our study provides that digitization helps in reducing the problem of ghost ration cards as well as restricts the forged entries of sale to be made by FPS dealers. It gives choice to the beneficiaries to opt any nearby FPS dealers and makes PDS process transparent. The findings of this study provide useful implications to various stakeholders. The government should install additional monitoring and surveillance facilities to derive more benefits from the Public Distribution System. The government should make an effort to offer beneficiaries with higher-quality food grains. FPS dealers must be transparent and fair in their dealings with beneficiaries, according to government officials. The beneficiaries should be properly identified, and a method for filing grievances should be in place and public should be make more aware about the redressal mechanism.

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**Annexure: Questionnaire**

Following are the benefits of digitalization of fair price shops, how much do you agree with these benefits based on your real-life experience? Please respond on a five-point scale from strongly agree to strongly disagree.

**Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly Agree=5**

Code	Items	1	2	3	4	5
Ben1	It helps in reducing the corruption by FPS dealers					
Ben2	Real time stock information with the FPS can be available					
Ben3	Timely supply of stock to FPS based on the stock availability					
Ben4	Problem of ghost ration cards will be reduced with digitization of the PDS process					
Ben5	Sale of excess food grains not purchased by the stakeholders, in open market will get reduced due to real time entries of all the beneficiaries					
Ben6	Forged entries of sale by FPS dealers will reduce					
Ben7	Gives choice to the beneficiaries to opt any nearby FPS dealers					
Ben8	Monopoly of the FPS dealers will reduce					
Ben9	Smart card for ration card holders makes the PDS process transparent					
Ben10	Digitization of records reduces the chances of fuzzy or unverifiable entries					
Ben11	Maintaining records of PDS process is easy and less time consuming due to digitization					