



The challenges of food security system in today's scenario: With special reference to Chennai city

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Abstract

Food security has also been a recurring theme raised in specific contexts in various fora convened by the United Nations. Targeted Public Distribution System (TPDS) is one of the most important schemes of the Government of India. The scheme under the Department of Food & Public Distribution, Ministry of Consumer Affairs, Food & Civil Supplies, Government of India, covers over 65 million poor families in the country. With a network of about 5.01 lakh Fair Price Shops (FPSs), the TPDS is perhaps the largest public food distribution network of its type in the world. With the above theme the present study is intended to analyse the efficiency of PDS in rendering food security services, evaluate the problems among the PDS and examine the satisfaction level of PDS Commodities with regard to quality, quantity, price and availability.

Keywords: food security, TPDS, fair price shops

Introduction

Indian food economy is 4.55 tonnes of food grains but more than 500 million people are undernourished and many more are vulnerable to food insecurity though the Government of India has devised many schemes under PDS (Swaminathan, 2009). Security (Food and Human) is one of the major challenges confronting the world today. Climate change impacts fundamental aspects of food security such as availability, stability, access and utilization of food. Food security has also been a recurring theme raised in specific contexts in various fora convened by the United Nations. The joint FAO/WHO conference on nutrition, held in Rome in 1992, declared, "Hunger and malnutrition are unacceptable in a world that has both knowledge and resources to end this human catastrophe" and recognized that, "access to nutritionally adequate and safe food is a right of each individual" According to K.C.S Acharya (1983), the concept of food security has, therefore undergone considerable modifications. Food availability and stability were considered good measures of food security till the seventies. It is now recognized that food availability alone does not ensure food consumption for the poor. Hence the need for the government to frame policies so that poor people will be able to get adequate amount of food for consumption. Targeted Public Distribution System (TPDS) is one of the most important schemes of the Government of India. The scheme under the Department of Food & Public Distribution, Ministry of Consumer Affairs, Food & Civil Supplies, Government of India, covers over 65 million poor families in the country. With a network of about 5.01 lakh Fair Price Shops (FPSs), the TPDS is perhaps the largest public food distribution

network of its type in the world. Under the TPDS scheme, BPL families are entitled to receive a fixed entitlement of essential commodities such as rice, wheat, sugar and kerosene at a subsidized rate. Besides, these four commodities certain states also provide for salt, pulses as well as processed items like wheat flour. These commodities are distributed through a network of outlets known as FPS. The essential elements to be promoted through public action for eliminating endemic deprivation and under nutrition include (i) food (ii) basic health, (iii) elementary education, (iv) clean water (v) living space and (vi) basic sanitation. They are of the opinion that, first, the orientation of public action must depend on the feasibilities of different courses of action. Second, public is a heterogeneous entity and is divided on the basis of class, ownership, occupation, gender, community and culture. At the same time state action for the elimination of hunger have been emphasized in the following forms, (i) food production, (ii) food distribution, (iii) income and employment creation on a regular basis, (iv) relief operation in the form of employment for wages in kind or cash (v) provision of health care and epidemic control, (vi) enhancing economic development and (vii) growth of income, etc., through expansion of productive activities and so on.

Statement of the problems

In India 273 million people are chronically hungry people due to insufficient food for them. This series of event in India have brought the question of food security into sharp focus (UNDP 1999). From June 1997 PDS turned into the Targeted Public Distribution System, the aim is to target the poorest household by differentiating the access quantities and prices at which one

is allow to buy. Food share is an inverse indicator of welfare (Deaton 1997): it follows that food security should be a major focus of policies concerned with well-being in this society still in India over 400 million people are poor and hungry (FAO 1999). Government of India provides many schemes to eradicate hunger but hunger exist due to rise in food commodity prices. The marginal difference in the prices of commodities in the PDS and in the open market and the poor quality of the commodities were cited as reasons for not buying items from PDS shops (Nagesh Prabhu 2000). In India the number of hungry people in India is always more than the numbers of people below poverty line, around 37% of rural households were below the poverty in 1993-94, 80% of household suffered under nutrition (UN FAO 2006). In India 30% of new born are of low birth weight, 56% of married women are anemic and 79% of children age 6-35 months are anemic (UN world food programme 2006).The Public Distribution System is established to meet the basic needs of the community who cannot afford to depend upon the market forces alone to obtain supplies of essential commodities. It involves a heavy outflow of subsidies from public exchequer by both Central and State Government levels; it implies that the system is imperative need to work at its peak efficiency. However, there have been several complaints about the system through mass media as well as direct representations it relate to operational issues like non-availability of commodities, poor quality bogus cards. Since PDS is one component of food grains management, studies dealing with food management aspects have to necessarily cover relevant aspects of PDS operations. Though the studies do not directly concern with the PDS, it enters the analysis as an arm of food management. The prime objective of the study is to know the challenges of food security system in today’s scenario – with special reference to chennai city, it carries the following objectives

- 1) To analyse the efficiency of PDS in rendering food security services in the society.
- 2) To evaluate the problems among the PDS.
- 3) To understand the satisfaction level of PDS Commodities with regard to quality, quantity, price and availability.

The sample of the study was 150. This sample was selected using Random Sampling Method. The data was collected by a well-structured questionnaire cover all aspects of Food security system. Factor analysis is used to narrate the key factor indicator of PDS problems related to its function. They were rotate into three factors namely existing problems in PDS, provisions to be executed and provisions to be improved. The second factor related to satisfaction level of PDS function and commodities involved two factors namely satisfaction with PDS commodity and satisfaction with PDS function.

Analysis and discussion

The PDS aims at ensuring stability in the food grains’ market, even when the availability of food grains in the open market fluctuates. The vulnerable sections of the society are the targets of the PDS (Swaminathan, A.M., 2010)6. The occupation of the cardholder plays a crucial role. It determines the cardholders’ economic level. The influence of the respondents’ occupation on the perception of quality,

quantity, availability and price of the PDS commodities is analysed

Association between Occupation and Perception of PDS commodities

Table 1: Null hypothesis: The occupations of the respondents have no impact on PDS commodities.

Occupations	N	Mean	SD	F Value	P Value
Daily wagers	45	13.04	.424	.986	.437
Temporary workers	46	13.24	.603		
Govt. Employee	5	13.40	.548		
Private Employee	13	13.00	.816		
Business	2	13.00	.000		
Petty Shop	1	13.00	.000		
Housewives	38	13.03	.545		

As per the acceptance of null hypothesis (P>0.05), the perception on PDS commodities is not related to the occupation of the respondents. Hence, it is concluded that there is no change in the perception of PDS commodities concerning to the occupation. The perception on PDS commodities is common to all, irrespective of the occupation. The Public Distribution System in Tamil Nadu was established to meet the basic needs of the community that cannot afford to depend upon the market forces alone to obtain supplies of essential commodities (Suryanarayan, 2000)4. The satisfaction level of the cardholders about the PDS function and commodities has been analysed using Factor Analysis. The eight variables of the satisfaction factors are analysed and compressed into two factors. They are used to analyse the satisfaction level of the PDS commodities and services provided to the consumers. The validity of the factor is analyzed using KMO and Cronbach’s Alpha.

KMO and Cronbach’s Alpha

Table 2

Kaiser-Meyer-Olkin	0.873
Measure of Sampling Adequacy	1589.557
Bartlett’s Test of Sphericity	28
Chi-Square Sig.	.000
Cronbach’s Alpha	0.865
No. of items for factor analysis	8

To test the validity of the instrument, cronbach alpha and KMO tests were conducted. Cronbach’s alpha was used to measure the interval consistency and reliability of the instrument. The cronbach’s alpha came as 0.865 as shown in the above table. Thus, the instrument was considered reliable for the study. The Kaiser-Meyer-Olkin measure of sampling adequacy is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors. High value (close to 1.0) generally indicates that a factor analysis is useful with the data. If the value is less than 0.70, the result of the factor analysis is probably not inappropriate. The KMO value for the instrument was 0.873, which is acceptable as a good value. Similarly, Bartlett’s test of sphericity tests the hypothesis that the correlation matrix is an

identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for detection. The Bartlett’s test showed a significant level of relevance and hence the instrument was accepted for further study.

The eight variables are used to analyses the service qualities of PDS through factor analysis

1. Adequate quota
2. No favoritism and nepotism
3. Correct weight and measure
4. Availability of commodity
5. No manipulation
6. No distribution of old stock
7. No delay in issuing card
8. No bad smell

Rotated Component Matrix

Table 3

	Component	
Adequate quota	.884	.097
Correct weight and measure	.773	.246
No bad smell	.769	.297
Availability of commodity	.766	.268
No favoritism and nepotism	.559	.527
No manipulation	.066	.878
No distribution of old stock	.280	.755
No delay in issuing card	.447	.593

In the rotated component value, the variables are classified into two factors, namely satisfaction with PDS commodity and satisfaction with PDS services. Satisfaction - PDS Commodity: It is the name given to the first set of factors and is identified through factor analysis. All these variables have a factor loading of more than 0.5. All these items have one commonality related to satisfaction on PDS commodity. In addition to this, adequate quota of PDS commodity is considered as the most important factor in maintaining the satisfaction on PDS commodity. It is followed by correct weight and measures, no bad smell, availability of commodity and no favoritism and nepotism. To maintain the commodity without bad smell and availability of commodity is considered as a very important factor in determining the satisfaction on PDS commodity. Satisfaction - PDS Services: The second factor is named as satisfaction-PDS services, It consists of certain variables of no manipulation, no distribution of old stock and no delay in issuing cards, which are relating to servicing quality. All the variables in this factor have values more than 0.59. The most important service in this factor is „no manipulation” which scores the highest value, it followed by no distribution of old stock and no delay in issuing card. Hence, it is concluded that there is “No Delay in issuing cards” and “No Manipulation” play a very important role in assessing PDS services. The problems of PDS are listed as given below:

1. Regular Distribution.
2. Proper Information to cardholders.
3. Increase the Quality of rice and wheat.
4. Increase Quantity of kerosene.
5. Increase sugar Quantity.
6. Improper distribution of Edible oil and grocery items.

7. Irregular monthly Distribution.
8. Provision for installments.
9. Undistribution of Rice and wheat to APL families.
10. Decrease the Price of kerosene.
11. Problem in Assessment for identification of BPL.
12. Problem in Assessment of APL identification.
13. Village level Ration shop.
14. Non-issue of Ration cards.
15. Irregular inspection in Village.
16. Improve the Present system.

These 16 parameters were framed in the final questionnaire. These statements have been evaluated on 5-point Likert Scale with responses from the respondents. These parameters help to draw certain conclusions through factor analysis of the data collected. The data collected through the questionnaire provides inputs for the factor analysis. The factor analysis is a data reduction technique that helps to reduce the number of variables or parameters to a manageable number. The factor analysis ideally reduces the number of variables to about one-third of its actual variables.

KMO and Barlett’s Test values

Table 4

Kaiser-Meyer-Olkin Measure of sampling Adequacy	0.880
Bartlett’s Test of Sphericity Chi-Square	7172.203
df.	120
Sig	.000

High values of KMO (between 0.5 and 1.0) indicate that the factor analysis is appropriate. Values below 0.5 imply that the factor analysis may not be appropriate. In this research, the KMO measure of sampling adequacy gives a value of 0.880, which is more than enough for applying the factor analysis technique.

Rotated Component matrix

Table 5

Increase Quantity of kerosene	.908		
Problem in Assessment for identification of BPL	.886		
Irregular monthly Distribution	.859		
Village level Ration shop	.806		
Irregular inspection in Village	.777		
Irregular Distribution	.763		
Improper distribution of Edible oil and grocery items	.744		
Proper Information to cardholders	.731		
Provision for installments		.907	
Undistribution of Rice and wheat to APL families		.727	
Improve the Present system		.670	
Increase Quality of rice and wheat		.657	
Decrease the Price of kerosene		.641	
Increase sugar Quantity			.735
Problem in Assessment of APL identification			.683
Non-issue of Ration cards			.599

Existing problems in PDS

It is the name given to the first set of factors and identified through factor analysis. All these variables have a factor loading of more than 0.73. A items have one commonality

related to existing problems in PDS. In addition to this, no increase in quantity of kerosene is considered as the most important factor in the existing problems of PDS. It is followed by no change in assessment for identification of BPL, irregular distribution through-out the whole month, No FPS in villages, irregular inspection in village level FPS, irregular distribution of edible oil and other items and the information do not reach the cardholders. To overcome the existing problems of PDS regular distribution throughout the month, regular inspection and change in assessment for BPL identification are in need to process in public distribution system.

Provisions to be executed

The second factor is named provision to be executed. They include the variables, provisions for installment, distribution of rice and wheat to APL families, increase the quality of rice and wheat, reduce the price of kerosene and to improve the provisions of present system, which are related to provisions to be executed in PDS. All the variables in this factor have values more than 0.64. The most important provision in this factor is the provision to get items in installments which scores the highest value; it followed by distribution of rice and wheat to APL families, improve the present system, increase the quality of rice and wheat and reduce the price of kerosene. Hence, it is concluded that increase the quality of rice and wheat, to have installment provision and to reduce the price of kerosene play a very important role in provisions to be executed.

Improve the effectiveness of PDS

The third factor is named as quantity of sugar must increase, APL should be reassessed and ration cards must be issued to non-cardholders. These are related to improving the effectiveness of PDS. All the variables in this factor have values more than 0.59. The most important effectiveness of PDS in this factor is quantity of sugar must increase which scores the highest value, it followed by APL should be reassessed and ration cards must be issued to non-cardholders. Hence, it is concluded that APL should be reassessed and ration cards must be issue to Non cardholders, it plays a very important role in improving the effectiveness of PDS.

Suggestions & Conclusion

Public Distribution System aims at protecting the vulnerable sections of the society by bringing them into the public distribution network. PDS mainly aims to ensure food safety to the vulnerable society by providing food substances at affordable price (Swaminathan, A.M, 2010)1. The Government of India provides a subsidy to food substances to guarantee the right to have food. The QQP (Quality, Quantity and Price) management is important for an effective public distribution system. The government should evolve a mechanism to deal with this aspect. The PDS aims at eradication of rural poverty and inequality by providing justice to poor (Pattanaik, B.K, 1997)2. Irregular distribution of commodities in PDS is a problem due to inadequate allotment, lack of space for storage and non-availability of

commodities. There is a difference between the urban and rural outlets in supplying commodities on regular basis. In urban outlets, the PDS commodities have been regularly distributed but this distribution is irregular in rural outlets. The present PDS is based on the urban and rural areas. The rural outlets are inefficient in the distribution of commodities to the cardholders. The staff members in FPS play a prominent role in PDS. They have more writing work. Majority of them are affected by this overload of manual work. The subsequent factors of inadequate staff, lack of enough space, over supervision and insufficient infrastructure facilities affect the effective functioning of PDS. The FPS staff are mainly affected by political intervention and regulating overcrowding. A state vigilance committee (autonomous) should be established for the efficient and transparent functioning of PDS. This committee has to be autonomous in the sense of being independent of the state supply department, district and block offices working towards the same purpose. The service of Public Distribution System is one of the crucial variables mediating the relationship between aggregate food availability and the individual entitlements. Ultimately, food security has to be ensured at a micro level i.e. to each individual. The two main pillars of food security strategy must be to ensure adequate economic and physical access to food. A well-functioning universal Public Distribution System (PDS) can be the means to ensure adequate physical access to food at affordable prices at the household level (B.K. Gairola 2011) [8] 3.

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