

# No Thumb No Ration

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**Abstract**— Public Distribution System introduced in India in 1947 for providing nutritious grains or food item to people in affordable prices. The Ministry of Consumer Affairs, Food and public distribution maintained the PDS (Publication Distribution System) through the network of Fair Price Shops. By using Ration Card which is official document issued by Indian government to citizen of India who fall under certain category to buy subsidized food grains. Under the National Food Security Act, all state government in India have to identify households that are eligible for purchasing subsidized food grain from the Public Distribution System and provide them with ration cards. In recent years, various problems occurred in ration systems like duplication of ration card using fake names or name of dead peoples and for overcoming this problem, Government of India introduced Biometric Authentication System like fingerprint Scan, Iris scan and many more. Government also taken initiative of linking of Ration cards with unique 12 digit Aadhaar Card number which prevent duplication of names and corruption in rationing system but Many People faced denial of benefits of ration due to aadhaar authentication failure and therefore, some major steps should be taken by Government for minimize authentication errors.

**Keywords:** Biometric Authentication; National Food Security Act; Public Distribution System

## I. INTRODUCTION

National Food Security Act introduced various scheme for people of India which includes Mid-day meal scheme, integrated child development scheme, maternity benefit, Nutrition for children and specially Public Distribution System. Public Distribution System is the very essential strategy that ensures availability of food grains to public at affordable prices for enhancing food security to the poor people and to remove poverty from India. Public Distribution System provides benefits in form of food grain like Rice (Rs.3 per kg), Wheat (Rs.2 per kg), coarse grains (Rs.1 per kg). National Security act covered total 1.2 billion people (2/3<sup>rd</sup> of total Indian population). The responsibility of distribution of grains is totally taken by state government through network of total 5 lakh Fair Price Shop (FPS). According to Aadhaar enabled Public Distribution System (AePDS)'s portal, Total Ration cards available in Maharashtra are 1,56,14,314 and total no. of FPS shops are 52,403 and in month of August 2019, Total Transaction are 18,53,441 and which is continuously increasing.

Before introducing Biometric Authentication in Fair Price Shops or Ration shops in India, All work in ration office done by worker in manual form and by maintaining manual registers but in that traditional system, sometime beneficiaries may not be benefitted and corruption was also increasing. For Increasing accuracy and efficiency in FPS shops, FPS automation model introduced which consist Biometric Authentication of beneficiaries using Fingerprint

scan, Iris Scan (which is optional), OTP-One Time Password (which is optional).

This authentication is done according to guideline of UIDAI (Unique Identification Authority of India).

*A. Why Aadhaar Based Authentication introduced in FPS shops?*

- It is introduced to remove and detect fake beneficiaries or duplicate beneficiaries
- It is introduced for removing corruption from Fair Price Shops and for transparent transaction at Fair Price Shops (FPS).
- It is also useful to manipulate the stock distribution in Fair Price Shops.
- It is also useful to manipulate incomplete manual records.

*B. Requirements for functioning of FPS Online Authentication Model:*

- Digitized Ration Card with Aadhaar linked data.
- Reliable, redundant full time network connectivity with sufficient bandwidth.
- Functionality in POS/Mobile tablet or other device for online Finger print authentication with UIDAI Server.
- Browsers in the device should be HTML5, CSS 3 and JavaScript compliant.

*C. How Aadhaar enabled authentication work at Fair Price Shops?*

In every month, Fair Price Shop Owner connects his point on sale device or digitized Mobile device to nearest governmental FSO office to fetch latest beneficiary details and new policy. At the time of authentication of beneficiaries, Beneficiary's fingerprint scanning is taken and if network connectivity is not available then deferred authentication will be performed as per UIDAI guidelines and then further transaction take place. If Finger print scan fails then Iris scan authentication has to be taken place and if Iris scans also fails then OTP should be sent to beneficiary's registered mobile number.

*D. Problems in Aadhaar enabled Authentication:*

The Success of Aadhaar based biometric system authentication is always depend upon functioning of Point-on-Sale machines, UIDAI servers, fingerprint scanner devices and internet connectivity. In March 2018, Supreme Court asked UIDAI CEO about aadhaar authentication failure which lead to denial of food grain to beneficiaries. A study report from three states, Andhra Pradesh, Rajasthan and West Bengal revealed that 20 Lakh people were denied food distributed through Public Distribution System or Ration shop due to Aadhaar authentication failure. According to that study report from Rajasthan, 1.2% of total beneficiaries face denial of service due to Aadhaar authentication Failure. Number of attempts required for successful Aadhaar based authentication in PDS in Rajasthan and Andhra Pradesh are

62.4% and 41.7% for first attempt respectively and 29.3% and 44.2% for two attempt respectively and 5.2% and 12.3% for three attempt respectively. While this failure include reasons like Aadhaar link problems, unavailability of Point of Sale devices, power issue and internet connectivity Problem.

**E. Data Collection:**

To tackle the problem and finding the reason of Aadhaar authentication problem, I decided to collect data from my locality as a sample of 100 persons. I asked some fundamental basic question to every person about Ration Shop’s transaction and biometric authentication especially about fingerprint scan.

Fundamental Questions are as follows:

- 1) Are you getting problem in finger print scanner?
- 2) How many times do you have to scan your finger prints on POS device?
- 3) Do you have any problem in Name, Address and Date of Birth on Aadhaar card?
- 4) Which type of Ration card do you have?

**F. Data Result:**

In my locality, all people in my survey are registered in same Fair Price Shop. There are three colour of Ration Card i.e. Orange Ration Card, White Ration Card and Yellow Ration card. Several Families said that the aadhaar authentication Failure is very genuine problem.

Out of total 100 persons, 48 persons having White Ration Card (They are not beneficiaries of PDS) and 52 persons having Orange Ration Card (They are beneficiaries of PDS) and No one having Yellow Ration Card (This card is holded by Below Poverty Line peoples).

Type of Ration card	Orange	Yellow	White
No. of Persons	52	0	48

Table 1: Number of Person as per Ration Card

As we know, 48 persons with white ration card are not beneficiaries of Public Distribution System. So, we have to concentrate on 52 peoples who are beneficiaries of Public Distribution System. As per my survey, 45 people are not having any problem in Biometric Authentication but they have to scan their fingers multiple times on Points on Sale devices. So I also noted that how many times they have to scan their fingers from one attempt to three attempts.

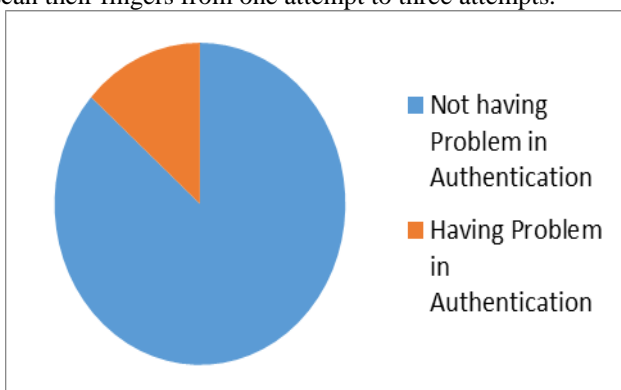


Fig. 1: Pie diagram showing no. of people having problem

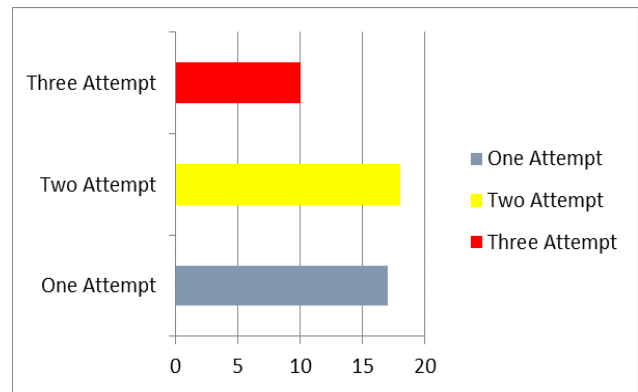


Fig. 2: Bar Diagram showing no. of attempt on e-POS device:

45 persons are suffering from problem of e-POS (Point-on-Sale) machine. They have to scan their fingers on Finger Print scanner multiple times. From my survey, Out of 45 persons, 17 people have to scanned their finger only one time and 18 people have to scanned their fingers two times and 10 people have to scanned their fingers three or more than three times.

**II. RESULT**

From my survey, I observed many points which could be the reason of Biometric Authentication Failure are as follows:

- Aadhaar Seeding: Many people in my survey are problem in Aadhaar Seeding. They have not link their ration card number to the UIDAI number and database. Government has taken initiative of digitization then we should co-operate to our government.
- Unavailability of POS device: In some rural area, Unavailability of Point on Sale Devices which is very serious problem. Government should have to take some step for improving quality of Public Distribution System in rural area. If Finger print scan is not working then Beneficiaries Iris scan should be taken as per UIDAI guidelines but In some Fair Price Shops, Iris Scanner is not available which can lead to denial of food grain to poor people.
- Internet Connectivity: As we know, by taking beneficiaries fingerprint on POS device. FPS owner fetch real time data of that person from PDS database and UID database. In some rural area, Internet connectivity is big problem that can be lead to denial of food grain to poor people. Government should developed infrastructure related to Internet connectivity in rural area.
- Power Failure: Many electricity related problem occurred in rural area. Fair Price Shops automation model will work only in good internet connectivity and electricity.
- Aadhaar Update Error: Many people have various anomalies in their Aadhaar Data in Name, Date of Birth and Address which lead to denial of food grain in FPS shops. Hence, Beneficiaries should update their real data on Aadhaar Portal.

**III. CONCLUSION**

Poverty and Unemployment rate in India is very serious problem. Population explosion is only one main reason all the

problem in India. Hence, For Poor people in India, Government of India introduced National Food Security Act which covered 1.2 billion people in India to provide subsidized food grain in affordable prices. Government also took initiative of Aadhaar linking with Ration card which is very helpful for needy beneficiaries But Due to some reasons, people facing denial of food grain because of Biometric Authentication which is compulsory at FPS shops to get your benefit. We should not have to changed current FPS automation model. We have to minimize Biometric Authentication Error by providing best infrastructure to Fair Price Shops like Good Internet Connectivity, Less Power Loss, Good e-POS devices and many more. The Success of Aadhaar based biometric system authentication is always depend upon functioning of Point-on-Sale machines, UIDAI servers, fingerprint scanner devices and internet connectivity.

#### ACKNOWLEDGEMENT

I wish to express my wholehearted appreciation and deep sense of heartfelts gratitude to my guide Prof. Swapna Nikale, Department of Information Technology, B.K. Birla College of Arts, Science & Commerce for her generous help, excellent guidance, lucid suggestions and encouragement throughout the course of this work. Her concrete directions and critical views have greatly helped me in successful completion of this work.

I am also thankful to all those who helped directly or indirectly in the completion of the work.

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