



## **USE OF BIOMETRIC TECHNOLOGY AND INCLUSION OF MARGINALISED COMMUNITIES IN FOOD SECURITY PROGRAMS**

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### **Abstract**

This paper presents research on the technological applications and its relation with the poverty alleviation programs especially the use of biometrics. One of these programs which is currently undergoing on the issue of food security in Jharkhand, is the Public Distribution System (PDS) and its transformation through technologies. The Public Distribution System is the backbone of India's food security programs. Today, biometric identification is widely used in ration shops around the nation. The aim of the paper is the assessment of biometric technology in the Public Distribution System (PDS) and the inclusion of marginalized communities within that particularly the tribal people. This paper illustrates the transformative power of using Digital Public Infrastructure (DPIs) for food security schemes and leads to the inclusion of vulnerable communities at large, especially during adverse situations of the pandemic. The system helped combat food grain diversion mafias at large and ensured inclusivity of marginalised sections of the people within the PDS system. The paper not only advocates the need of these digital mechanisms for the smooth functioning of social security programs but it also critically articulates such provisions. It looks upon the technological advancements which our society currently requires for development but also highlights the limitations coming with it which cannot be denied. The introduction of biometric technology to the PDS has rebuilt it into one of the robust mechanisms which identify the beneficiary, regulate the shops, and bring transparency to the system, warding off bogus ration card holders and other malpractices.

**Keywords:** Biometrics, Tribal, PDS, Food Security, Technology

### **Introduction**

Food is the most basic requirement for the sustenance of life on earth and one of the most important elements for human survival. Food therefore, largely impacts human growth and concerns of making food available to each and every human on earth is growing with rapid increase in human population. The concern about food crises have effectively impacted the third world nations with the unequal distribution of power,

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wealth and resources with the west dominating over the least developed nations who have majorly suffered under colonial rule and other foreign rules and invasions. Food security has haunted India historically. India, too being a former colony saw a terrible famine under British rule in 1943. It was an anthropogenic famine in the Bengal province of British India during World War II.

Food crisis automatically raises the issue of food security. It is multidimensional, not just concentrated as a social problem but it covers many dimensions like environmental, socio-economic, global, human rights and development issues. Food security emerged as a major challenge post-independence in India since one-third of the population was suffering from hunger. The issue is not just limited to production and availability but it can be attributed to the issue of distribution as well. The massive food insecurity experiences in India led to the formulation and implementation of the Public Distribution System (PDS) for the larger good. The main aim of the PDS was to cater to the large masses of underprivileged and marginalised communities. It became the main food security program catering to masses by providing food at subsidized rates.

The PDS scheme is implemented in two parts:

One where the central government procures essential commodities from the private producers at below market price and at second level these are distributed throughout the country, through ration shops or fair price shops which are located in every state. PDS is an important part of national social policy which operates at the state level. It is like a humongous task of providing food to the large portion of the population in an already highly populated country and implementation of the policy to the lowest level. To feed such a large population of both urban and rural poor requires a robust mechanism. These mechanisms are also known as social protection. Social protection broadly refers to a set of policies and programmes aimed at protecting people against poverty, vulnerability, and social exclusion throughout their life. And PDS is one such social protection which aims at making people food secure at all times by providing them the basic food grains at a very low cost as low as Re 1.00. It acts as a safety net for the marginalised and the most vulnerable citizens of our country.

One of the most important part of formulation of such schemes was movements like Right to food campaign, which led to the formulation of schemes and policies combating food insecurity which further led to the formulation of National Food Security Act, 2013 incorporating schemes like PDS (Rationing Shops), Mid-Day Meal, Integrated Child Development Services (ICDS) Scheme. Along with these developments, the nation saw technological advancements as well. With the country witnessing the digital revolution, technological facilities were also incorporated in the proper implementation of these social securities or policies. One of the systems which the government mandated was the incorporation of Aadhaar based biometrics in the PDS system to avoid discrepancies and malpractices.

### **Introduction of Biometric Application to PDS**

The Aadhaar based biometrics systems were introduced for PDS in 2017 to avoid long standing issues of leakages and corruption, making the system accessible and easy for everyone, especially for the beneficiaries. In 2018, the Supreme Court also mandated the use of Aadhaar for transactions involving the transfer of resources between the government and the citizens. The use of such applications can be seen as useful since the government aims to provide or transfer items of value to the people which involves different agents in the process. In such a case, it is more reliable to use an application based system which can authenticate the identity of the beneficiaries. PDS beneficiaries were requested to register with Aadhaar and their identification number was linked with the ration card database

The question is why biometric based systems are mandated or recognised as a useful method in implementation of such policies?

It can be looked through these aspects that such a system can firstly test the eligibility of the beneficiary that whether the person applying is eligible or not, or are they trying to exploit the system. It then looks at the identity of the beneficiary that the person who is trying to avail the service is the same person who has registered for the service. Many times it has been seen that the ration card is issued in a different name than the person who is using it.

It also authenticates the transactions carried by the agents in real time and it becomes easy for the government to also transfer money to the agent within a given period of time. Looking at the system of such applications one can notice that not only it reduces malpractices, it also increases the efficiency of work, leading to better implementation and management of the policies. Previously, things were carried on papers and records were maintained accordingly which had room for errors and corruptions. But with technology and its implementation even the minor errors could be identified, handled or avoided. Today, the beneficiaries can avail of the services through online applications. All the information regarding PDS and ration cards is available online. With such a system the people at every level are becoming aware of the schemes and how these function. These systems of biometrics have also led to logical transactions. Like through the Aadhaar system one can authenticate that the beneficiaries are not trying to manipulate by receiving the same benefit twice. There were earlier instances where a person would make two ration cards under one person's name and can avail the benefits from two places at the same time; *those collecting the ration yesterday are not collecting it from other PDS shop today*. Biometric based systems create a link across all the interaction and one shot interactions. Also, it ensures that the agents dealing with the people are not dealing with ghost accounts or fake accounts which was a norm earlier but it saw a significant decline after the introduction of authenticated direct transfers.

Coming to the question of why biometric is important? It can be said that it leads to high security and assurance – Biometric identification provides the answers to “something a person has and is” and helps verify identity of the person and authenticate it. Biometric point-of-sale machines are set to recognize beneficiaries through their fingerprint; delivering the exact monthly allotment to which each user is entitled, again authenticating the users' identity avoiding corruption and malpractices at both ends ; of the agents and at the end of the receiver. The collection of such data of people converts people into machine readable data leading to automated functions. It can easily recognise and differentiate the entitled and non-entitled users. It helps in combating the exclusion of the marginalized from the poverty alleviation programs. The Aadhaar based biometrics or technology based reforms of social security has taken centre stage in the Indian social policy discourse. Since the past ten years this system has transformed the PDS system at large by bringing significant changes to it. This computerised system at state level is the requirement of contemporary India, which is facing the issue of hunger and poverty. These are required for providing safe social protection to the marginalised section of our society and to address the recurring exclusionary practices which can be noticed even in the distribution of rations. As National Food Security Act envisions that almost two-third of India's population requires PDS food grains where technology can prove to be playing an important role in streamlining the program. With the help of technology, we can combat the root causes of diversion or ration dealers pressurized to find secure sources of income for themselves. When we talk about technology driven systems, one can also look for alternatives to the Aadhaar system. Like in one of the studies, by Khera (2018), bring out other options or alternatives to the Aadhaar biometrics system. She considers two different options:

In 2012, it was noted that in Chhattisgarh's Centralised Online Real-time Electronic Public Distribution System (COREPDS) experiment, smart cards with an embedded memory chip were used for ration shop transactions, thus, it recorded every transaction on the chip and was uploaded online. Second, instead of employing Aadhar-enabled point of sale equipment at the ration shop, QR-coded smart cards in Tamil Nadu preserve a digital record of every transaction through the use of a smart card reader. Khera draws attention to the notable benefits of these two options when comparing them to Aadhaar-based biometric authentication. She notes that smart cards, whether they are QR-coded or have embedded memory chips, offer significant advantages and allow immobile individuals like old persons to rely on others to fetch PDS commodities. And hence, it definitely rules that biometric driven facilities are significant to run any poverty alleviation program successfully.

### **Inclusion of the Marginalised Communities**

One of the important markers of this system was the large inclusion of the marginalised communities including the Tribal population at large. In a state like Jharkhand, which is highly populated by tribal population it is noticeable that in this system the marginalised communities felt included as they could avail the benefits without fail. The system not only identifies the beneficiary rapidly and with precision but it strengthens the leakage controls leading to better monitoring of the whole process of procurement and distribution. It has reduced ration dealers' incentive to corruption and the affordance of enabling recipients to opt out of the ration shop they are registered with if there is a suspicion of diversion by the ration dealer. People coming from Tribal communities are not manipulated anymore at least not massively. Their signatures and thumb impression cannot be manipulated or used for fake accounts where their details were used by others who are not liable for these benefits. And the actual beneficiaries were excluded from the system but with the introduction of Aadhaar based biometric system one can notice that such malpractices were reduced at large. In fact, during the Covid 19 first phase of lockdown and after that, it became necessary to include those who didn't have any ration card but were marginalised. Especially the tribal people are included in the system who were previously denied the service of PDS by giving them ration cards. They also felt at ease while taking ration as they couldn't be discriminated against by the ration dealer. Now the Shopkeeper himself/herself made sure to call them on mobile or made sure that ration will be delivered to them otherwise it can lead to strict action or complaints to the highest authorities. So, the marginalized community at large felt that the system of biometric has made the program accessible to them. As mentioned above, smart cards or QR code driven systems can also enable elderly and disabled to avail the facilities without their exclusion.

### **Conclusion:**

The importance of existing welfare programs cannot be ignored especially in the wake of Covid 19 when India also suffered massively, lockdown was declared and when other institutions were in fray, collapsed or were not prepared for such an emergency. Schemes like PDS (Rationing Shops), Mid-Day Meal, ICDS have provided relief measures to the most marginalized citizens of the country who otherwise have perished or have suffered massively. The crisis has highlighted the importance of the existing welfare schemes and thus, we as a nation with the largest population cannot do away with such welfare measures. Rather than that we can introduce robust mechanisms in PDS shops for fair, equitable proper distribution of staple food grains and technology driven mechanisms like using biometrics, Aadhaar or Smart cards can bring transparency in the implementation of social welfare schemes. They can also ensure that the aid is going to the right person (bogus ration card holders are identified) and malpractices are avoided. The

introduction of new mechanisms and improvements come along with the criticisms or loopholes of the system.

Biometric system or Aadhaar directly contributes to the development of digital infrastructure that facilitates social and financial transactions and inclusion by including previously marginalized groups into these welfare programs. But these technological specifications do come along with their limitations. One of the major limitations is the accessibility of digital resources. The internet connectivity, availability of e-governance centres with help desks are required to assist the people with preparation of their smart cards or any other biometric system. The state governments should assess the regional aspects before deciding the method of authentication. It should be kept in mind that these provisions are being introduced for the marginalized section of the society who would be technologically weak and digitally excluded class. When we talk about OTP generation for better authentication, we need to keep in mind that not everyone for whom these programs are implemented would have cell phones or internet access. Digital technologies are playing a significant role in program improvements and enhancements but one cannot ignore technical errors and faults linked to data inequalities and access to entitlement.

The PDS represents a narrative of victors and losers reflecting upon the success as well as minor setbacks with the introduction of new technologies. There could definitely be technological glitches, exclusionary practices and some unwanted changes which come along during the process of governance and implementation of the programs but one has to accept the changes for the good. The road to the future is technological advancements which is undeniable and therefore it becomes essential that the country overcomes digital divide as well for the inclusion of marginalized sections for their upliftment.

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