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Additional Information:

- This is an Accepted Manuscript of an article published by Taylor & Francis in Oxford Development Studies on 16 November 2016, available online: http://www.tandfonline.com/10.1080/13600818.2016.1258050.

Metadata Record: https://dspace.lboro.ac.uk/2134/22862

Version: Accepted for publication

Publisher: © Oxford Department of International Development. Published by Taylor & Francis

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Please cite the published version.
Digital Governance and the Reconstruction of the Indian Anti-Poverty System

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Abstract: On a global scale, programmes of social protection for the poor are becoming increasingly computerised, and architectures of biometric recognition are being widely used in this respect. This paper seeks to illuminate how these architectures, inscribed in anti-poverty systems, structure ways to “see the state” for citizens living in poverty. To do so I study India’s Public Distribution System (PDS) in Kerala, a state that is augmenting its main food security scheme with the biometric recognition of its users. In government’s narrative, biometric technology is depicted as an optimal solution to the illicit diversion of PDS goods on the market. At the same time, through the multiple narratives collected across the state, beneficiaries are found to dispute this view in different ways, based on the mixed effects of the new technology on their entitlements under the PDS. The state’s capability to reconstruct its image, through the means of digital innovation, is hence found to be constrained by the perceptions derived by citizens in their encounters with the new technology of governance.

Keywords: Asia, India, Food Security, Public Distribution System, Biometric Technologies, Social Policy
1. Introduction

Social protection has emerged as a core theme in contemporary studies of development policy and governance. The notion of social safety nets encompasses all the schemes protecting the poor and vulnerable from food insecurity, unemployment, lack of sustainable livelihoods, and all the problems that the condition of poverty entails. As of Sen (1981), social safety nets are instrumental in liberating the poor from the “substantial unfreedoms” that threaten the quality of their lives, as they provide the means to combat poverty at its very basis. These programmes are the epitome of social protection, and there is a growing sense that they can offer an effective response to poverty and exclusion on a global scale (Barrientos & Hulme, 2009; Devereux & Vincent, 2010; Gelb & Decker; 2011).

Over the last few years, social safety nets worldwide have become increasingly automatised, and computerised through mechanisms that theories of the state per se do not fully contemplate. These mechanisms belong to the domain of information technology (IT) innovation, and refer in particular to biometric architectures, which perform user authentication on the basis of biological data. In anti-poverty programmes, biometrics are key to enforcing targeted systems of access, as the uniqueness of biological data should ensure reservation to genuinely entitled users. However, the change brought by these technologies goes beyond reconstruction of the state-citizen interface: by reconfiguring access to anti-poverty nets, IT innovation contributes to their reform, and ultimately affects the social policies in which the lives of poor citizens are inscribed (Sarkar, 2014).

It is hence important to study how biometric technologies reshape citizens’ access to the state, rebuilding the image that is conveys through anti-poverty programmes (Corbridge, Srivastava, Williams, & Véron, 2005). More specifically, two processes should be observed: first, a process of image construction by the state, using digital innovation to create a public impression of accountability and effectiveness. Second, a process of image perception by citizens, who “see the state” through a new generation of computerised social safety nets. Both processes are researched here.

This paper studies an old anti-poverty programme, the Public Distribution System (PDS), as it has been redesigned through biometric recognition in India, with a focus on the southern state of Kerala. The PDS is the oldest, widest food security net in India, consisting in subsidisation of primary necessity goods received by poorer households in monthly rationed quotas. In the PDS supply chain, procurement by the Food Corporation of India (FCI) is followed by redistribution at several administrative levels, before items reach the fair-price shops where they are accessed by beneficiaries. Faced with a problem of leakage, Kerala introduced a set of innovations, culminating in the ongoing switch to user identification under the Unique Identity Project (Aadhaar), aimed to identify every Indian resident through a unique 12-digit number and the capture of biometric details.

Across eight months in 2011-2012, I have conducted an interpretive case study of the PDS in Kerala, using a qualitative method of data collection and analysis. My main data set consists of 126 in-depth
interviews with actors governing the digital PDS (software developers, government officials and program officers), its users (PDS beneficiaries), and actors revolving around the system in different ways (local politicians, right-to-food activists, volunteers at pro-poor organisations, et similia). I have used narrative analysis of interviews’ contents (Riessman, 2008) as the main tool to qualitatively reconstruct causal processes, and integrated interview data with participant observation in the ration shops, telecentres, and Taluk Supply Offices adopting the digital PDS. Following the case study method (Yin, 2009), primary data have been triangulated with statistics, press releases, and government documents on the PDS and its digital transformation.

Data analysis has led me to elicit processes of construction and perception of the state’s image, mediated through the biometrically transformed PDS. In terms of image construction, biometric control is framed, in governmental narratives, as the ideal solution to the problem of “rice mafia”, consisting in the systematic diversion of goods from the PDS to the private market by illicit means. Jos Mooij (1999) represents the PDS as a key tool of electoral politics, as state governments use a well-functioning food security system to portray themselves as effective and accountable. The process I elicit, with respect to the e-PDS, extends Mooij’s argument to biometric technology, which is constructed as a key component of the solution to the programme’s leakage.

At the same time though, the extent to which this process affects citizens’ perception of the state is limited. It is found that citizens, in receiving self-reconstructed images of the state, re-elaborate them through the perceived effects of technology on their entitlements under the PDS. Aadhaar’s biometric architecture is read in multiple ways by PDS users: their views are influenced by the exclusionary effects of biometric recognition, the perceived limitation of e-PDS to ration shop monitoring, and most importantly its role in preparing the shift to a cash transfers system, regarded with suspicion by many beneficiaries. All these narratives seem to reveal that the state’s capability of image-building through technology is constrained by the perceptions derived by citizens in their encounters with the PDS.

My work aims at expanding seminal theory on the anthropology of the everyday state to account for the inclusion of digital, and especially biometric, architectures in the state-citizen interface. A new generation of anti-poverty programmes, dominated by biometric recognition, is pervading the developing world, and the ways in which political society is disciplined will be deeply influenced by its advent. In this perspective, the paper aims to elicit the core mechanisms of transformation, relying on the construct of the image (meant as subjective knowledge, as in Boulding, 1956) as a tool for examining the dynamics at work. Newly computerised technologies of rule deserve particular attention when it comes to their effects on anti-poverty practice.

This paper is structured as follows. Section 2 details Corbridge et al.’s perspective on anti-poverty programmes as technologies of rule, and augments it through the prospective role of biometric

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1 *Taluks* are sub-district administrative units in Kerala. A Taluk Supply Office is the bureau in charge of local administration of the PDS and other government schemes.
architectures in transforming social safety schemes. Section 3 presents the case of the PDS, in terms of both the old technology of rule and the new digital artefact that is transforming it in Kerala. Section 4, based on data analysis, elicits the process of IT-induced image reconstruction by the state. The analysis is then continued in Section 5, where citizens’ processes of perception of the state through different loci of image formation are observed. Conclusions, and implications for expansion of existing theory, are drawn in Section 6.

2. “Seeing the State” through Technologies of Rule

The idea of “Seeing the State” is a reversal of “Seeing Like a State”, Scott’s (1998) view that high modernist states would produce citizens by inscribing them in classifiable categories, making them amenable to biopolitical control. In a reversed perspective, Corbridge et al. (2005) detail how citizens, rather than being seen and classified, actively see the state in its physical manifestations. The heart of the theory lies in an anthropology of the everyday state (Benei & Fuller, 2001): citizens do not conceive of the state through indirect projections, but through the embodiments (bureaucrats, village officers, local agencies) that they encounter in their daily lives. This represents a rupture with the Weberian vision of a “faceless” bureaucracy, as encounters with the officers and agencies in which the state is embodied are real and personalised.

These encounters are often frustrating and sometimes violent for the poor in India (Corbridge et al., 2005, p. 3). This is partially because most of the poor inhabit, as of Chatterjee (2004), the “rough and tumble” worlds of political society, where frustration is frequent in interactions with bureaucracy. Chatterjee’s dichotomy, between a civil society of equals and a subaltern political society, is epitomised by India today: whereas richer elites inhabit the former, the latter encompasses the poorer masses, excluded from most forms of participation in their own development. In this domain, the poor can “see the state” only dimly, through the practices of often corrupt officials.

Still, encounters with the state are far from being unstructured. Over time, India has developed a host of anti-poverty programmes, highly needed to maintain appeal on the “dangerous classes” (Corbridge & Srivastava, 2013). Anti-poverty programmes, ranging from food security to employment generation, inscribe citizens into observable categories (caste, poverty status, et similia): in doing so, they go far beyond the sheer mechanism of poverty alleviation. In performing the developmental function of the state (Williams, Srivastava, Corbridge, & Véron, 2003), they act as technologies of rule, as they provide a way to advance state control through the means of governmentality.

The concept of technologies of rule refers to all institutions, practices, and classification techniques through which government is performed (Rose, 1999). Within theories of the everyday state, this

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2 While Chatterjee suggests that “civil society and the poor coexist in India like oil and water” (cited in Corbridge et al., 2005, p. 3), Corbridge et al. point to a “sea-change” in contemporary Indian politics, based on the more participatory character of the most recent anti-poverty schemes.
notion has a particular connotation: as it emerges from Corbridge et al. (2005), technologies of rule result from the conflation of policy principles with the governmental apparatus enacting them. The concept is predicated on the Foucauldian idea that government is explicated in a set of disciplining techniques, resulting in the indivisible unit of governing rationality with the tools and practices through which it comes alive (Foucault, 2007). As a result, we refer to technologies of rule to indicate the unity of policy principles with the physical instruments that translate them into practice.

Social safety schemes, studied in Corbridge et al. (2005), are the core technology of rule to which the poor are subjected in contemporary India. They result from integration of a policy rationale, aimed at protecting the poor from the vulnerabilities of their condition, and a set of physical measures, translating this in the practices of government described above. The heart of the theory lies in the view that these programmes pervade the everyday lives of the poor, and structure their encounters with the government: rather than as an abstract entity, “the state” is met through the agents of anti-poverty policy, ranging from mediators of employment guarantees to sellers supplying food rations in the villages. Anti-poverty programmes structure the encounters through which the poor “see” the state, and are thus the core device through which their images of the state are formed.

What is not contemplated by theories of the state, and needs attention in current scholarship, is the computerisation that anti-poverty programmes are undertaking at a global level. The digitisation of social safety nets is taking diverse shapes: cash transfer schemes, formerly based on the physical delivery of envelopes, are shifting to mobile money (Aker, Bounnijel, McClelland, & Tierney, 2015; Devereux & Vincent, 2010). Programmes of emergency assistance, such as cash transfers to households affected by drought, are increasingly automatising their functions (Gelb & Decker, 2011; Vincent & Cull, 2011). Employment guarantee nets, based on secure recognition of workers, are moving to biometric identification (Bhatti, 2012; Muralidharan, Niehaus, & Sukhtankar, 2014). All these programmes have long been into place, yet new technologies are rebuilding their structures, yielding consequences on the relation between the state and its beneficiaries.

Diverse streams of ICT for Development (ICT4D) literature have dealt with this phenomenon. Some look at the benefits of computerisation on programme delivery: digitisation is expected to help save time and increase the security of cash transfers (Aker et al., 2015). The same tools are functional in reducing leakage, hence acting as means to greater accountability of the state (Bhatti, 2012; Muralidharan et al., 2014). Discussion of benefits is juxtaposed to reflection on the issues involved, since these systems are prone to political manipulation, information capture, and invisible costs to the user (Devereux & Vincent, 2010). But the general perspective, with a note of caution for the problems in point, is that technology yields potential to build better and more reliable anti-poverty schemes.

Another stream of scholarship goes beyond expected benefits, and focuses on the relation between technology and the context of implementation. The idea that “artefacts have politics” (Winner, 1980) is the core concept here, stating that technology acts as an embodiment of the political visions behind it,
and should hence be conceived in terms of political effects rather than of its materiality alone (Cordella & Iannacci, 2010). Computerisation is seen in terms of the policy objectives that it enacts, and interacts with context by advancing specific visions of social policy design. This shifts the focus on the political genesis of computerisation, and on the meaning of development that technology brings into the programmes it helps redesigning (Prakash & De, 2007).

These ideas have long characterised information systems scholarship, and are now being applied to automatisation of anti-poverty programmes. Veeraraghavan (2015) studies computerisation of a large workfare scheme as a means of surveillance, which advances a top-down view of control on workers. Masiero and Prakash (2015) trace links between a digital food security scheme and the policy of narrow targeting embedded in it. Carswell and De Neve (2013) study how “technologies” in the broad sense (including cards, documents and the like) reveal people’s everyday interactions with the state as embedded in relations of power, subordination and agency. The question here is not anymore on benefits, but on the politics advanced by computerisation, and its effects on beneficiaries.

Another stream focuses on the policy effects of biometric systems, whose presence in the domain of social protection has increased over the last decades. In biometric technologies, data capture (usually involving fingerprints and/or iris scans) allows unique authentication exactly because of the biological nature of data. This function is the root of the technology's relevance to social safety: secure authentication, whose accountability is enhanced by the uniqueness of biological data, enforces the targeted nature of programmes, allowing access to those entitled and excluding all others from appropriation. In systems where corruption and leakage are problematic, biometric devices are particularly helpful in identifying entitled users (Gelb & Decker, 2011; Muralidharan et al., 2014).

The material features of biometrics should hence allow to exclude fake beneficiaries, and reach the poor and needful in a more reliable way. Yet, the enforcement of barriers to access may come without means to ensure inclusion of the many households that, while needful, still do not see their benefits acknowledged (Khera, 2014; Ramakumar, 2010). While the association with anti-poverty objectives has increased the public legitimisation of biometric systems (Srinivasan & Johri, 2013), many complain about the exclusionary effects of the same architectures in social safety practice. In this debate, the consensus is that biometric technologies are enacting deep transformation, which is changing the face and substance of anti-poverty schemes worldwide.

It hence needs to be asked, what are the consequences of reconstructing anti-poverty programmes through biometric devices? Most importantly, new technologies participate in people’s sightings of the state, in terms of both the state’s construction of itself and its perception by citizens (Kuriyan & Ray, 2009). The advent of biometrics, and more at large the pervasive change that digital technologies imply, led me to investigate construction and perception of the state’s public image through these technologies. To do so, I needed long-term engagement with a practical instance, in which an old anti-poverty programme (the Indian PDS) was being reconstructed by a biometric infrastructure.

The PDS supply chain, providing primary necessity goods (mainly rice, wheat, sugar and kerosene) at subsidised prices to the Indian poor, has three main phases. Firstly, goods procured from the FCI and private producers are distributed at the district level through Authorised Wholesale Dealers (AWDs), who store them in dedicated warehouses known as godowns. Goods are then lifted from the local AWD by fair-price shop owners, who collect them on a monthly basis for redistribution to programme recipients. Finally, beneficiaries buy subsidised goods from fair-price shops, known as “ration shops” as commodities are sold in monthly rationed quotas. The difference between PDS and market prices should allow poorer households to afford the goods required to cover their basic nutritional needs.

As in Corbridge et al. (2005), the ration shop is the physical space of access to the PDS, and constitutes a core locus of image formation processes. In the shop, citizens encounter the state in the form of ration dealers, the agents selling them subsidised food items. This exemplifies the “anthropology of the everyday state” illustrated above: the state is met in the form of the ration dealers who allow people’s access to the PDS, and (as detailed below) sometimes constrain it by failing to provide rations. Encounters with them, whether well-functioning or ridden with frustration, hence play a major role in poorer people’s sightings of the state.

The PDS was originally universal, meaning that all citizens could have access to it. Yet in the fiscal crisis of the 1990s, international funding institutions criticised the scheme for its universal coverage, resulting in “meagre transfer at exorbitant cost” (Radakrishna & Subbarao, 1997, p. 72). This was at the root of the nation’s move to a targeted system in 1997: in the targeted PDS, entitlement is related to poverty status, and aimed to the households termed as below the state-specific poverty lines. The policy shift determined a set of mixed effects, of which the case of Kerala is paradigmatic.

Before 1997, Kerala operated the best PDS in India (Khera, 2011a; Swaminathan, 2002). Under the universal system, it catered to 97% of the state’s population (George, 1979, p. 23), and its impact on beneficiaries’ nutritional status was high and significant (Kumar, 1979). This was very relevant in a state whose food-deficit situation, per se, would put people’s nutritional security in peril. The philosophy behind the Keralite system was based on the universality of the right to food, and on the need to translate it in a programme capable of serving all households in need of support. ³

However, the shift to targeting in 1997 caused major ruptures in the scheme. The new system, allocating goods to each state based on poverty incidence, reduced supply of PDS goods to Kerala to less than 10% of the pre-targeting amount (Swaminathan, 2002, p. 51). In parallel, users termed as

³ Historically, Kerala witnessed a socioeconomic transition from below, in which peasants played a key role in subverting feudal relations of power. Subsequent governments’ consideration for redistributive policies has fostered the construction of a well-functioning PDS.
above-poverty-line (APL) were de facto phased out, as they were subjected to only very limited subsidy on food. As a result of the drop in their customer base, many ration shops had to close, which concurred to causing a wave of suicides among ration dealers (Suchitra, 2004).

One of the problems resulting from post-targeting dynamics is that of leakage, which is severe at the national level too. As commodities flow from FCI and private producers to ration shops, a high share of goods is lost in the process, mainly due to illegal sales on the private market. This phenomenon, popularly known as rice mafia (rice is the staple commodity in the PDS), may put the whole programme at risk, and its persistence is the core argument by the programme’s detractors (Bhalla, 2011; Gulati & Saini, 2015). Yet, leakage has triggered reforms at the state level, which in several cases have been successful (Drèze & Khera, 2015; Himanshu, 2013).

In Kerala the digitisation of PDS, delegated to the National Informatics Centre (NIC), has been at the core of the programme’s reconstruction. Computerisation was conceived to monitor the PDS supply chain, hence detecting and preventing foodgrain diversion. Government officials, and the NIC staff that I have followed during implementation, were adamant on the anti-leakage nature of the effort, and the IT-based PDS was built to detect diversion through digital monitoring. To achieve this purpose, reconstruction of the programme was phased in two parts, a first one in which infrastructure was built and a second one, still ongoing, in which it is being augmented with Aadhaar’s biometric recognition.

In the first phase, NIC developed a suite of software articulated in three modules, out of which a front-end one involving citizens, and two back-end ones used by staff at Taluk Supply Offices (TSOs). The front-end interface consisted in a Ration Card Management System (RCMS), a workflow-based application for ration card requests: once received through the registration counter, applications are verified by rationing inspectors, who then submit them to the TSO for approval. Applications are performed through Akshaya centres, the telecentres (public-private Internet kiosks) operating across the state. This has partially shifted the locus of image formation, from the busy public offices where applications were originally made to more citizen-centric e-kiosks (Madon, 2005).

The two back-end functions pertain, respectively, to allocation of goods and inspection of the ration shops in the state. Through a programme named Allocation 2.0, TSOs can ascertain the requirement of each ration dealer in their area, and allocate PDS goods to them consequently. As a result, all shops should have enough stock to deliver monthly rations to all households registered with them. Another application, called an Inspection Monitoring System, is a database of inspections conducted by officers in all ration shops, to combat the illicit trade of PDS commodities.

4 In Kerala, as in most Indian states (with the exception of Tamil Nadu, which maintained a universal PDS), the move to a targeted system resulted in the dichotomy between the APL, left with a very limited subsidy, and the BPL households, for whom the subsidy remains substantial. In 2000, the Antyodaya Anna Yojana (AAY) scheme was introduced, for the poorest of the poor to receive greater quantities of subsidised foodgrains.
But it is the second phase of digitisation, aimed at rebuilding state-citizen encounters in the ration shops, that affects the beneficiaries most visibly. This phase involves integrating PDS with Aadhaar, the unique identification system devised by the Unique Identification Authority of India (UIDAI). The Aadhaar project aims at solving identification issues, by endowing each Indian resident with a 12-digit number and registered biometric details (fingerprints and an iris scan). Massively high rates (above 95%) of Aadhaar enrolment in Kerala make it technically possible to use it for access to anti-poverty schemes, and a pilot project in Trivandrum has started this phase: a set of ration shops have been endowed with point-of-sale machines, performing Aadhaar identification to ascertain users’ entitlement to the PDS.

Interviews with government officials and NIC software developers have revealed the policy rationale behind this measure. A frequent practice of ration dealers is that of attaching bogus cards, whose number is not registered in the system, to their shops. By registering sales to fake users as real, they can mask illegal sales to the market, and make their activity appear normal in the registers checked by the inspectors. Biometric recognition, by linking each user to its own biometric details, ensures that sales are only made to real beneficiaries, as all transactions need to be matched by a valid Aadhaar number. This implies a twofold accountability mechanism: non-genuine beneficiaries are excluded from subsidy, and ration dealers are prevented from selling goods to non-entitled users.

This is the rationale at the root of the biometric PDS. In the effort of computerising the PDS, biometric authentication involves the last mile of the supply chain, and the ration shop’s technology is reconstructed in the process. An old anti-poverty programme, such as the PDS, is thereby subjected to the principles of biometrics, and the space in which this reconstruction occurs is the same in which citizens form their images of the state. This has enabled me to focus on the construction and perception of the state’s image, as reproduced by these new technologies.

4. Biometric PDS: The Self-Reconstruction of the State

Narrative analysis conducted at the government level has allowed me to focus on the biometric PDS as a means to reconstruction of the state’s public image. Mooij (1999) illustrates how the programme is used as a means to recast the image of the state, with governments enhancing their popularity through well-functioning PDS infrastructures. An effective food security system is used as a means to political appeal, and as digital technology is now applied to anti-poverty systems, an image-building role for it needs to be explored.

In the narratives collected from government officers, and from NIC staff in charge of PDS computerisation, I have found a twofold mechanism of IT-based reconstruction of the state’s image.

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5 In September 2013, an order by the Supreme Court of India has forbidden states to make enrolment in social programs conditional to Aadhaar registration. However in March 2016, a new order has reversed the previous one, providing legal backing to the use of Aadhaar in anti-poverty programmes.
One side of it has been briefly illustrated above: the front-end side of e-PDS has been moved from public offices to Akshaya telecentres, the e-kiosks distributed across the entire state. The Akshaya project is a public-private partnership in which private entrepreneurs, known and integrated in the local community, manage e-kiosks that provide all kinds of government services, ranging from bill payments to applications for social security schemes. By moving ration card applications to the Akshaya network, the government has shifted the locus of image formation to a trusted space, away from the public offices in which the poor are often neglected or mistreated (Gopakumar, 2007).

And yet, there is another side to the mechanism of self-reconstruction enacted by the state. This consists in the construction of a problem-solution nexus, i.e. a logical link between a problem and its solution, flowing from the root cause of PDS leakage to the technology devised to fight it. Identifying this link requires analysis of two narrative streams, both recurrent in government officers’ speech: one revolves around the problem, depicted as centred on ration dealers’ involvement in the rice mafia. The other is about the solution, and portrays the biometric PDS as the best way to tackle the problem.

Government staff is unanimous in recognising leakage as a serious problem, and in acknowledging its consequences on the food security system. As noted by the former Collector of Rationing,

Kerala is known to have one of the best PDS in India, but it is still very corrupted (…) prices are higher on the market, so there is an incentive to sell [PDS goods] there.

The root cause of leakage is recognised in the rice mafia, to which practically all diversion from the system is attributed. While losses in transportation and storage are sometimes acknowledged, leakage is blamed on the black market networks, on which BPL rice is sold for much higher prices than on the PDS. This generates a gap in the system, which makes the poor systematically unable to access the food items to which they are entitled.

A core question is on which actors are actually involved in the rice mafia, as long supply chains may make it hard to determine responsibility for diversion. Blame is attributed quasi-unanimously on ration dealers: very often, ration shop customers are turned down, with the excuse that the shop has “run out” of stock. Government officials are adamant on ration dealers’ responsibility:

In Kerala there are many bogus cards, which copy existing ones or invent households that do not exist (…) it is the ration dealers that fabricate bogus cards, not the customers. So, they can pretend having sold goods to the BPL, when instead they have sold them elsewhere. (Rationing Inspector, Trivandrum)

To be sure, ration dealers have been put in a dire position by the central government’s shift to a targeted PDS. As noted above, targeting has forced many ration shops to shut down, and left the remaining ones at serious risk of unviability. This has been a factor pushing many of them into market diversion: as in Khera (2011a, p. 1058), corruption has become a “requirement of economic survival”
for many fair-price shop owners. This point is corroborated by the voices of ration dealers, whose narratives of struggle for business viability are explored in greater detail below.

A second thread of narrative revolves around the solution, embodied in integration of Aadhaar in the PDS. This is articulated into three mechanisms, all embedded in the Aadhaar system.

The first mechanism lies in secure identification of PDS users. As noted above, the main means for ration dealers to divert foodgrains is based on bogus cards registered in the shops, which mask illegal sales to the black market. By linking each card to the biological data of the owner, biometrics will make this virtually impossible, as point-of-sale machines require recognition of users’ fingerprints to allow transactions. As reported by a member of staff at the Kerala State IT Mission (KSITM):

Ration cards have barcodes (…) often they are copied, and ration dealers claim false sales as a result. With Aadhaar, there is no risk of this, because control will be biometric.

Yet, this would per se be insufficient, if the e-PDS did not provide a way to check that all transactions conducted by ration dealers happen through point-of-sale machines. The second mechanism stems from the fact that, beyond checking the identity of buyers, point-of-sale machines register exactly the amount of goods sold at every transaction. This makes it possible to determine the requirement of each shop, and to allocate them commodities on a monthly basis. This leaves no room for “inventing” sales, as noted by another official at KSITM:

The system will reveal what goods are sold, and to whom. Ration dealers (…) claim that stocks have finished, and sell them on the market. But now, the system will be able to track exactly who buys what.

A third mechanism acts on the incentive for ration dealers to cheat on their customers, by pretending having run out of goods – or selling them at prices higher (or quantities lower) than PDS. At present, all households are registered with a ration shop, and cannot decide to opt out of it in case that irregular behaviour is suspected. Aadhaar is instead constructed to imply “portability” of the system, as biometric authentication can be performed from everywhere. As a NIC officer noted:

Ration dealers will be unable to count on their usual customers, because people will be able to buy [PDS] food from everywhere (…) they won’t be able to compete if they continue their cheating.

These mechanisms, attached to the integration of Aadhaar in the programme, complete the narrative used by the government to recast its image through the e-PDS. This is a carefully designed problem-solution nexus, in which attribution of guilt to ration dealers is matched by a threefold system to prevent them from diverting foodgrains. From this narrative, the state emerges as a self-constructed problem solver, concerned with devising “the right technology” to combat diversion of goods to the

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6 The monthly bill, summing up all transactions conducted through Aadhaar, is the basis on which allocation for the subsequent month is provided.
market. This turns an old technology of rule into a biometric system, whose capability of combating corruption helps building legitimacy in the eye of poorer people (Srinivasan & Johri, 2013).

5. Image Perception: “Seeing the State” through the Biometric PDS

To complement the perspective of image construction, focus is moved to perception of the state through the PDS, as experienced by its beneficiaries. I do so through the narratives collected from PDS users in the ration shops, as well as in the multiple settings (self-help organisations, urban slums, rural villages) in which extensive interviews with beneficiaries have been conducted. While some issues, as illustrated below, are found with particular intensity in specific communities, other threads of narrative seem to cut across social groups, revealing common preoccupations for recipients in different contexts. Citizens’ voices are integrated with those of the telecentre entrepreneurs, ration dealers, and members of PDS staff interviewed across the state.

Speaking to citizens, I have encountered diverse views on the image of the state depicted above. Akshaya entrepreneurs concur in reporting high rates of ration card applications performed through them, and users often compare the telecentre-based process with the frustration they previously experienced in public offices. There could be downsides to the use of telecentres, as IT mediation of access to state services may be implemented unevenly across the state, creating new geographies of exclusion (Wade, 2002). In addition, telecentre entrepreneurs may be tempted to adopt a logic of profit maximisation, which clashes with the objective of social inclusion for which e-kiosks were created: implications of moving ration card services to Akshaya centres hence need elaboration.

Akshaya entrepreneurs need some income generation mechanism to ensure sustainability of their businesses, as government funding is only disbursed for the set-up phase. Once the telecentre’s activity has started, the entrepreneur needs to ensure continuity of the business, providing locally relevant content for intended users. To do so, telecentres do not only offer government services, but also engage in private activities that can ensure a stream of cash flows, such as courses of computer training or access to communication facilities. As a telecentre entrepreneur in Malappuram district remarked,

“If I do not make a profit, I cannot sustain my business. All the telecentres that failed to understand the needs of the people have shut down.”

However, a logic of mutual exclusion – in which either the telecentre makes a profit, or it becomes able to involve the poor and disadvantaged – is disputed by existing works on Akshaya (Gopakumar, 2007; Kuriyan & Ray, 2009; Madon, 2005). This is because multiple channels have been established to maximise Akshaya’s social inclusion: the project started with an e-literacy phase, in which one member for each family was invited to the local telecentre, to attend a course imparting the basics of
computer usage. Geographic coverage, which places one telecentre at a maximum of 3 km from each house, is also functional to accessibility, and so is the role of telecentre entrepreneurs as active facilitators of e-services:

Beforehand, it was hard to find information about government schemes. Akshaya entrepreneurs know about the schemes, and help people making applications and getting exactly the information they need. (Basheer, telecentre user, Malappuram district)

As it emerges from entrepreneurs’ narratives, this is the heart of the training imparted to them by the Akshaya project office. Selected among trusted members of their local communities, entrepreneurs act as representatives of the state, who make the connection between users’ needs and the novelties brought in by information technologies. This is why, when users come in for ration card services, telecentre staff guides them through the process, from the documents required to the actual steps of the online application. This makes Akshaya centres different from public offices: with the proactive presence of trusted facilitators, the project changes the public face of government, ultimately determining a positive mechanism of image reconstruction in the eye of citizens (Kuriyan & Ray, 2009).

But when it comes to the problem-solution nexus, positing Aadhaar as a means to combat the rice mafia, users’ narratives reveal a more complex picture. People are found, in particular, to question the governments’ arguments on the nature of leakage, and consequently on the technology devised against it. The state of Kerala is characterised by high political mobilisation, and trust in government is often affected by people’s engagement with politics. In the case of integration of Aadhaar in the PDS, there are diverse narratives of suspicion, which cast doubt on the problem-solver’s image that the state has constructed for itself.

These narratives have been encountered throughout the whole state, but some groups of citizens tend to focus on particular aspects of the problem. One first thread of discourse, found especially in rural villages, reveals concern on the practical feasibility of digitisation. It is felt that computerisation of ration shops would come under severe predicament if infrastructure could not support it, a problem synthesised by a citizen in a rural area of north Kerala:

How will this work? Electricity keeps coming and going. Every now and then, a blackout leaves us without light for many hours (…) people have a right to the PDS, and we cannot lose it because of power shortages. (Anil, PDS user, Kannur district)

The issue is that with power shortages, or faults in biometric identification, point-of-sale machines may not work, and hence the system will end up excluding genuine beneficiaries. This happens in the context of a programme that, far from being fully inclusive, already suffers from exclusion errors that leave out substantial numbers of households (Khera, 2014; Ramakumar, 2010; Swaminathan, 2008). These exclusions are perceived as a serious problem, which needs examination in its own right.
The problem of establishing principles for inclusion into social safety nets flows from the move to a targeted system, which relegates the PDS to households recognised as below the state-specific poverty lines. However as of Swaminathan (2008), households classified as BPL or AAY in all-India are just 29.5% of the total, which substantially limits the coverage of food subsidies in a nation already suffering from severe hunger and malnutrition. Lists of BPL citizens are capped for each state, and their numbers can only be expanded at the expense of local government: there are, beyond this, numerous reports of well-off households obtaining BPL cards illegally, to enjoy additional government benefits. A PDS user in Malappuram district illustrates the issue:

Irrespective of one’s real status, it is very difficult to be recognised as BPL. Many people in the slums have blue cards [APL], but they clearly live in poverty. In the meantime, a lot of rich people get BPL cards out of friendship with people in government. (Sheena, PDS user, Perinthalmanna town)

This implies that numerous households, who should be genuinely entitled to the PDS, are left out of it by design, and this severely limits the potential of the programme. The problem presented by the perverse consequences of targeting is structural, and the solution may need rethinking of programme design along lines of greater coverage (Sen & Himanshu, 2011). Diverse measures can be taken to improve poverty mapping, and ideas of participatory classification have been experimented with in Kerala, resulting in substantial increases in the estimated poverty incidence (Swaminathan, 2002, p. 51). However these classifications should acknowledge the causes of poverty, and take into account social and political factors that they often fail to consider (Williams, Thampi, Narayana, Nandigama, & Bhattacharyya, 2012).

In a situation in which many needful households are already excluded from PDS, the preoccupation is that Aadhaar may worsen the problem rather than solve it. This is because, in a system affected by severe exclusion errors, biometric recognition is tailored to combat the opposite problem, presented by the illicit inclusion of non-entitled beneficiaries. While effective in combating inclusion errors, the newly computerised technology of rule does not help tackling exclusion of the needful: given the depth of this problem, the introduction of Aadhaar recognition may be a suboptimal intervention for the PDS (Ramakumar, 2010). The citizens’ voices collected on the field reflect this preoccupation, and problematise the image of a successful anti-poverty agent that the state has constructed for itself.

A second problem affects the problem-solution nexus on which the state’s image construction is predicated. The government’s assumption, according to which ration dealers are the core guilty part, is contested by recipients, who often point to the supply chain agents before ration shops as guilty for diversion. This theme cuts across locations and communities, and is often brought up by the food security activists and volunteers that work with PDS recipients. In particular, there are concerns with a border mafia that subtracts commodities before the AWDs:
A lot of goods are stolen at the border (...) the goods that really get to the shop, and are not sold somewhere else, are just a small share. It is easy to say, the ration dealers are causing the system not to work, but goods are being stolen during transportation. (Ayesha, PDS user, Malappuram district)

Would there be any corruption, if the private sector was not involved? There are many private companies that buy PDS goods, repackage them, and then sell them on the market. Otherwise, the rice mafia could not exist. (Rajesh, food security activist, Trivandrum town)

While it is hard to verify these assertions, I could observe that the back-end modules of the software (on allocation of goods and inspection monitoring) are still in an early stage of development, and in many TSOs they are not used at all. On the one hand, investing in this would probably be less popular than acting at the front end, as these modules do not "transform" the ration shop and hence do not affect people's sightings of the state. Still, the current strategy trades visibility for effectiveness, as it focuses on the last mile alone rather than on holistic monitoring of the PDS.

Early-stage diversion is reported by many ration dealers, who claim to be systematically unable to lift the amount of foodgrains needed to serve all users. Issues raised by ration dealers need to be examined in greater detail, as targeting has substantially reduced their customer base. Ration dealers discuss the complexities of running a fair-price shop, arguing that their incomes have been significantly reduced, undermining the possibility of sustaining their businesses. As noted by one of the leaders of the All Kerala Ration Dealers’ Association, it is hard to make a living from a ration shop:

Ration shops (...) are not viable on their own. Many of us have had a shop licence for a very long time, and have no chance to learn a new profession. Now [after 1997] things have changed: many customers have left the shops (...) many shops have had to close down because of debt.

With the reduction of the state-level PDS supplies to less than 10% of the original amount, the average monthly purchase of foodgrains in Kerala diminished from 4.1 kg to 1.8 kg in just five years (Khera 2011b: 107). The drastic reduction in offtake is the heart of the problem, and market diversion is often presented, even by ration dealers themselves, as the only viable solution for PDS shops to survive. As noted by a fair-price shop owner in one of Trivandrum’s slums:

We get a commission on the goods we sell, but that is very low. We are left alone with our shops, not knowing how to even cover our expenses. (Chaitram, ration dealer, Chenkalchoola slum)

Reflecting the point of view of ration dealers, these narratives put the problem in a more complete perspective. Engagement with black market networks is still deplorable, and actively contributes to impeding poor people to access the food items to which they are entitled. At the same time, the root cause of the problem is ascribed to a perverse consequence of targeting: ration dealers’ voices reveal the unsustainable conditions of their shops, and often end up pointing to the stories of those who committed suicide as a result of debt. Aadhaar monitoring may prevent shop owners from cheating, but its effect is limited without real alternatives for them to become capable to make a living.
Finally, a third stream of narrative reveals what is perhaps the most profound cause for citizens’ concern. Backed by reforms envisaged at the national level, the adoption of biometrics is related to the incoming shift to a cash transfers system, which if implemented would dismantle the PDS at its very roots. While there is consensus on this at the government level, citizens across the state present a more complex picture:

Aadhaar will make cash transfers mandatory for everyone. This is very difficult for the poor, who may have never used a bank at all. (Swetha, PDS user, Malappuram district)

The real problem with Aadhaar (…) will be in the long term. Since people can use every ration shop, ration dealers will not know how many customers they have, and so they will not be able to require the right amount [of foodgrains]. The only way is giving licences to grocery shops (…) the PDS will disappear, and people will have to use the market. (Rajesh, food security activist, Trivandrum district)

Fears of exclusion of the poor, lack of protection from inflation, and lack of familiarity of vulnerable groups with banking systems are the main practical concerns surrounding a shift to cash transfers. These need to be added to political understandings of the shift, based on the unwanted involvement of the market in a system that was isolated from it since the beginning. Citizens’ surveys conducted across India reveal strong preference for the current PDS, as compared to a potential move to a cash transfer system (e.g. Aggarwal, 2011; Puri, 2012; Khera, 2014). As it is widely feared, a shift to cash transfers could exacerbate the exclusion error initiated with the move to a targeted PDS.

It is this last thread of narrative that now matters most directly. The narratives presented here were collected before a new national government, led by Narendra Modi’s National Democratic Alliance (NDA), openly voiced the intention to replace the PDS with cash transfers, and envisaged operational measures to conduct the shift. To do so, Aadhaar is being combined with a financial inclusion programme (Jan Dhan Yojana) and mobile technologies: Jan Dhan Yojana aims at providing each household with a bank account, which will be the backbone infrastructure to transfer benefits to those entitled. The combination of Jan Dhan Yojana, Aadhaar and mobile payments, acronymised as “JAM trinity” in the governments’ narrative, is being planned with the explicit purpose of rebuilding the nation’s anti-poverty system, by converting existing subsidies into a lump-sum transfer to the BPL (Government of India, 2015). People’s concerns with this move, and with the implications of the end of the PDS, should be taken into account as policy decisions are made.\(^7\)

Overall, narrative analysis has hence revealed deep asymmetries between the government’s perspective and citizens’ appraisal of the biometric PDS. As illustrated, the government depicts biometric technology as the key to combating the rice mafia, by monitoring all the transactions

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\(^7\) To be sure, this does not imply that cash transfer programmes are per se ineffective or biased. For example, Aker et al. (2015) demonstrate that transfers enabled by mobile money can work as effective instruments of social protection. The problem voiced by recipients is not with the JAM project in itself, but with the implications that a shift from the PDS would have on their access to food security entitlements.
conducted by ration dealers. At the same time, many PDS users dispute this view, as not only does Aadhaar monitor the supply chain only partially, but its architecture actually prepares a policy shift which will dismantle the PDS as it is currently known. The image of a skilled problem-solver, which the state has constructed for itself, is not taken at face value, as citizens do not "see the state" through it, but through the effects of technology on their entitlements within the PDS.

Finally, lessons drawn from the case go beyond explication of the role of technology in streamlining anti-poverty systems. What is suggested, depicting Aadhaar as a potential means to shift to cash transfers, is the inscription of a political agenda in technology, as cash transfers yield a view of anti-poverty nets which involves the market rather than excluding it. A shift to cash transfers is a likely evolution of India's food security policy, and biometric architectures constitute the backbone of the "JAM trinity" at the basis of change. The reform potential of biometric architectures seems therefore deep enough to enable radical reconstruction of the anti-poverty system.

6. Lessons and Conclusion

In this paper, based on a case of computerisation in the Kerala PDS, I have studied the effects of incorporation of digital architectures in anti-poverty programmes. Field narratives reveal that on the one hand, the state constructs the biometric infrastructure of Aadhaar as the ideal means to combat diversion from the PDS. On the other hand, this is disputed by users, in that technology is seen by many as exclusionary, over-focused on ration dealers, and oriented to the elimination of PDS in favour of cash transfers. The power of technology, in reconstructing the state's image, seems therefore to be limited by the real-life encounters of citizens with the PDS.

As biometric technologies are increasingly being adopted in anti-poverty nets worldwide, these findings have two main implications. First, Corbridge et al. show how poorer citizens “see the state” through encounters with it, based on anti-poverty technologies of rule. As these are augmented by biometric architectures, this fosters an active role of the state in image-building: as image formation is structured through encounters between state and citizens, biometric recognition is used to reconstruct exactly these encounters, as it does with ration shop transactions in the PDS. This feeds into citizens’ sightings of the state, and enables governments to reinvent themselves as skilled problem-solvers.

Second, narrative analysis has highlighted that citizens re-elaborate, and sometimes dispute, the new images of the state rebuilt through biometrics. This is how the same technology, allegedly constructed to combat illegal diversion of PDS goods, comes to be perceived as exclusionary, mistargeted, and finalised to a largely unwanted shift from PDS to cash transfers. This depicts technology as the carrier of a policy agenda, which if implemented may significantly rebuild the existing reality of anti-poverty structures. The potential of biometrics therefore goes beyond reinvention of the state’s image, and extends to the actual reconstruction of anti-poverty systems.
At the time of writing, the central government’s intention of shifting from the PDS to cash transfers based on the JAM trinity has been declared, but not translated into action. If the policy shift is made, biometric authentication will be used to identify recipients, and to enable transfers of subsidy money to their bank accounts. While this would dismantle the existing PDS supply chains, in which the rice mafia networks proliferate, the concerns presented here remain: a well-functioning banking infrastructure, coupled with protection against price volatility and mechanisms to avoid exclusion of beneficiaries, are points that a valid cash transfers programme will need to include. Absence of any of these may result in malfunctioning that would perpetuate the errors made with the PDS.

In particular, the main limitation of JAM emerging here is its focus on tackling inclusion errors, when the problem of the PDS is found chiefly in the massive exclusion of genuinely needful users. A move to cash transfers would not augment the system’s coverage, and that leaves untouched the problem of the many vulnerable households left out from social protection. The risk of further exclusion, due to issues with implementation of electronic infrastructure and low familiarity with banking systems, would actually worsen the problem, potentially leaving more households unable to access the subsidies to which they are entitled. While cash transfer programmes have been successful elsewhere, this specific transition seems risky, and reasons for preoccupation often surface when citizens discuss it.

At the same time, the national landscape shows signs of improvement for PDS reform. At the state level, interventions towards a more inclusive PDS are becoming frequent: in addition to Tamil Nadu, Andhra and Himachal Pradesh have moved to a quasi-universal system, and the coverage of BPL lists has been expanded in many states (Khera, 2014). These interventions are accompanied by the approval on September 12, 2013, of the National Food Security Act (NFSA), which gives 67% of the Indian population legal rights over a uniform quantity of 5 kg of foodgrains, to be made available at a fixed price of Rs.1-3 per kg through ration shops. The common denominator of these interventions is that of making the PDS more inclusive, reducing prices of access and increasing entitled quantities.

Should the central government decide to preserve the PDS and combat leakage through incremental reforms, at least two types of intervention will be needed. First, holistic monitoring should be preferred to sheer focus on ration shops, which are only one stage of the programme’s supply chain. Front-end interventions on anti-poverty systems may well be more popular, as they affect the physical loci of image formation for citizens, as opposed to the back-end measures that citizens cannot really see. Yet at the same time, failure to address supply chains in their early stages may easily result in persistence of leakage, as it leaves a substantial part of the problem untouched.

Second, while monitoring ration dealers is important, the current system still sees them struggling with the threat of unviability induced by the targeted PDS. Interventions to monitor them, such as Aadhaar-based point-of-sale machines, are to be combined with policy measures that remove their incentive to diversion. At the state level, the Kerala government has already taken some steps in this direction, by
giving credit concessions to ration dealers and allowing them to sell commodities outside the PDS. The nation-wide NFSA, which will expand the customer basis of ration dealers, will be a significant improvement in this respect.

At present, biometric architectures are reshaping anti-poverty programmes worldwide, a phenomenon epitomised by the case presented here. I hope to have contributed, with this paper, to understanding their role in reconstructing the anti-poverty systems through which many citizens, subjected to their functioning, still "see the state" in most of the world.

References


