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Arunima Mukherjee, Sundeep Sahay

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# Sinking under its own weight: Case of Aadhaar mediated entitlements in India

Arunima Mukherjee<sup>1[0000-0002-4374-9551]</sup> Sundeep Sahay<sup>2[0000-0001-8482-9171]</sup>

<sup>1,2</sup> University of Oslo, Norway and HISP India, India {arunimam,& sundeeps}@ifi.uio.no

**Abstract.** In this paper, we analyse through a largely conceptual analysis the application of the Aadhaar biometrics identification system in India, now assuming complex proportions, and how that facilitates or not citizen's entitlement of welfare benefits. The conceptual analysis is informed by the works of James Scott's Seeing like a State which cautions against such large scale state sponsored schemes ending up as disasters. Amartya Sen's analysis of famines informs how it is important to focus on the access to the entitlement rather than the entitlement itself, which, potentially can lead to entitlement failures. The conceptual analysis developed helps to critically analyse two case vignettes related to two welfare programmes of the midday meals and the public distribution system. The paper concludes by arguing for the need to critically discussing how Aadhaar can be made to work in practice while supporting broader development objectives, rather than arguing whether Aadhaar is inherently good or bad.

**Key words:** Aadhaar, India, Entitlement Failures, Scott and Sen

## 1 Introduction

In low and middle income countries (LMICs), an important defining condition of development is the effectiveness or not of the relation between the state and the citizen around the provision of social services like public distribution, education, public health, and various others. Citizens, by law and their national constitutions, have various social entitlements that the state is expected to deliver on. Various state various departments and ministries like of health, education, rural development, have designed various schemes to ensure that these entitlements are delivered effectively to citizens. A recent trend in many LMICs is the designing of various information systems to ensure these entitlements are effectively delivered through various means such as improved identification of beneficiaries, tracking of services delivered, monitoring of impacts such as numbers of people pulled over poverty lines and other promised benefits. These systems by virtue of being large and multi-faceted, and through their attempts to model complex social phenomenon, have the potential to become large and autonomous [24], leading to unintended consequences such as for surveillance by the state, rather than strengthening the delivery of entitlement to citizens. This begs the empirical question of "how are these information systems mediating the relationship between the state and their delivery of entitlement benefits to citizens."

We examine this question in the context of the Aadhaar initiative implemented in India over the last 5 years or so. This large digital platform of biometrics-based database of residents of India now represents a large-scale pan-country information infrastructure with many actors involved. The Aadhaar database is large-scale containing details of nearly 1 billion people, supported by a complex infrastructure involving multiple inter-connected components such as biometrics identification devices, de-duplication algorithms, central databases, and the use of authentication devices at point of registration and service delivery. This infrastructure is increasingly being used as a basis to model complex social services such as the public distribution system, mid-day meals provision, and the employment guarantee scheme. These attempts by the State to introduce Aadhaar in the delivery of citizens' entitlements has led also to a

number of protests and debates amongst civil society groups and are being fought under the jurisdiction of the Supreme Court of India. There are also other voices which discuss the tremendous benefits that have accrued through the use of Aadhaar, such as in terms of cost savings. In this paper, we examine some of these debates, particularly from the perspective of the citizens and their ability to access their legal entitlements. Conceptually, we draw upon two strands of work to inform our analysis. of control as they become more complex, distributed and managed from a distance. The first strand of inspiration is Amartya Sen's [21] seminal work titled *Poverty and Famines: An Essay on Entitlement and Deprivation*. In this essay, Sen argues that starvation is the characteristic of some people not having enough food to eat and not of there not being enough food to eat. While the latter can be a cause of the former, it is but one of the many possible causes. Whether and how starvation relates to food supply, Sen argues is a matter for a factual empirical investigation of an "entitlement failure", where people are unable to access food, even though there may not be a shortage of food per se. The second strand of analysis is drawn from James Scott's *Seeing like a State* where he argues large scale state sponsored technology efforts are doomed for failure as firstly, they try to simplify complex social phenomenon in a manner which is just not possible. Secondly, they tend to be used to further an agenda of surveillance for the state, rather than of furthering welfare of the citizens. Taken together, these two strands of work helps to formulate and analyse the research question of: "does Aadhaar mediated state delivery of citizens' entitlements improve their access or not to their benefits, or do they further the agenda of state surveillance and control?" While acknowledging this question is large and complex to answer in a conference paper, we attempt to outline the contours of a conceptual framework that can help engage in such an analysis. We believe this is an important exercise to attempt, as Aadhaar is having large-scale social consequences, with voices both for and against. A theoretically grounded framework can help making more informed and critical judgments of the issues on hand, and potentially support more informed policy and practice around Aadhaar implementation experiences. The rest of the paper is organized as follows. In the next section, we outline our conceptual approach drawing on the two strands of research introduced above. In section 3, we very briefly introduce the methods. In section 4, we give a background of the Aadhaar initiative, including its technical and institutional dimensions. In section 5, we present two case vignettes developed based on published public debates. In section 6, we present our analysis and discussions, followed by brief conclusions.

## 2 Conceptual framework: to analyse the state-citizen-technology relation

We draw from two large bodies of work drawing from political science, development economics and social studies of technology to formulate a conceptual perspective to analyse our case study.

### 2.1 Amartya Sen: Entitlement failures

Amartya Sen in his classic treatise *Poverty and Famines* [21] challenged the dominant assumption that total food-availability decline is the central cause of all famines. Instead, Sen argued that famine happens through "entitlement failures," which occurs even when there is no decline in food production. Sen changes the focus from availability to access, understood through the concept of entitlements. Entitlement of a per-

son is defined as ‘the set of alternative commodity bundles that can be acquired through the use of the various legal channels of acquirement open to that person’ [5-23]. For example, in India, every citizen has an “entitlement” for food rations through the public distribution system. If there is a failure of a citizen’s entitlement to food, they can face starvation and famine.

In the context of food, Sen identified many other conditions contributing to entitlement failure and subsequent famine. Sen’s analysis of the Bengal Famine of 1943 identified amongst other reasons, inflation after the war to be a key reason of entitlement failure, despite food production in 1943 being 13% higher than 1941. The Bangladesh famine of 1974 was contributed to by a poor food rationing system that only focused on the urban population, adversely affecting the entitlements of rural Bangladeshis leading to one million deaths through famine. The Ethiopian famine of 1973 was contributed to by a poor system of transport between regions in overall conditions of stable food productivity. So, conditions defining access becomes crucial in shaping entitlement failures or not.

Sen also argues that a country’s political system including the checks and balances of democracy can act as a shield against famine. In a democratic system with a free press, the occurrence of a famine will inevitably reduce the popularity of the government. The fear of being voted out of power motivates democratic governments to take measures to mitigate famines. In contrast, absence of democratic systems for the same reasons may lead to famine conditions, as what happened in China in 1959-61.

In summary, Sen’s ideas help to understand the relation between the state and its citizens mediated through the notion of entitlements – what the state is legally expected to provide to its citizens, and how effectively citizens are able to access that or not.

## 2.2 James Scott: “Seeing like a State”

James C. Scott [16], in a telling account of the use of state power in initiatives aimed at social transformation, argues that these efforts have led to large-scale tragedies. Scott’s examples of failed initiatives include the creation of permanent last names, the standardization of weights and measures, the establishment of cadastral surveys and population registers, the design of cities, and the organization of language. A common theme across them is the failed attempts by the state to make society legible by trying to transpose complex, illegible, and local social practices onto a standard and simplified grid, to enable central recording and monitoring. Mechanisms used by the state include censuses, cadastral maps, identity cards, and statistics, which fail for two main reasons: “The proponents of these plans regard themselves far smarter and far-seeing than they really were and, at the same time, regard their subjects as far more stupid and incompetent than they really were” [16-343].

Scott, in his analysis of the workings of the state, identifies legibility as a central problem arguing that the state “always seemed to be the enemy of people who move around” [16-2]. Their central effort is to make a society legible, requiring them to rationalize and standardize, to make administration more convenient, enabling more fine-grained interventions in areas such as taxation, public health measures, political surveillance, and relief for the poor. However, in this process of simplification, the realities of a complex social world are abridged, for example:

*These state simplifications, the basic givens of modern statecraft were, I began to realize, rather like abridged maps. They did not successfully*

*represent the actual activity of the society they depicted, nor were they intended to; they represented only that slice of it that interested the official observer. They were, moreover, not just maps. Rather, they were maps that, when allied with state power, which would enable much of the reality they depicted to be remade (ibid., p. 3)*

Scott identifies four elements that contribute to the making of large-scale failures. The first concerns the attempt to social engineering through administrative ordering and simplification. The second concerns an adherence to a highly modernized ideology, emphasizing the value of using technical and scientific progress to master nature and create natural laws to apply to social processes. The third element concerns an authoritarian state using its coercive powers to bring a high-modernist design into being. For this to happen, there is the fourth condition of an incapable civil society that is passive in resisting the design of the state. Taken together, these conditions help to create the “imperialism of high-modernist, planned social order.”

Raghvendra and Sahay [15], while not explicitly drawing on Scott, illustrate his concerns in describing an Indian state’s attempt to standardize a citizen’s household and its social processes through a 17-digit identification number. In summary, Scott alerts us that large-scale state initiatives don’t tend to work because of their inability to represent complex social phenomenon through mechanisms of simplification and standardization, and coupled with ideology of surveillance, these efforts become untenable.

### 2.3 Summarizing our conceptual framework

Summarizing, the key elements from the above two sets of discussions, we propose an initial analytical framework based on the following principles:

- i. From Sen, to understand entitlement failures, we need to analyse the access of citizens to entitlements, and the conditions which enable or not this access.
- ii. Technology with its particular material features will play an important role in enabling or not this access. This role can be both material or perceptual concerning the beliefs of the citizens about what is the role of the technology.
- iii. From Scott, we will wish to understand what are intentions of the state in the use of the technology in mediating citizens’ entitlements. Scott points out to four important motivating conditions – intention to simplify and modernize; desire to adhere to a high modernist ideology; the nature of the state – authoritarian or democratic and how they want to use the technology; and, are the citizens active or passive and whether they are able to mobilize actions to resist the designs of the state.

The above questions provide us a basis to understand the role of the Aadhaar initiative in mediating citizens’ access to their entitlements. We now turn to briefly describing the methods before moving on elaborating the technical and institutional dimensions of the Aadhaar initiative before describing some case vignettes of its application to different citizen entitlement schemes.

## 3 Methodology

Our methods are based primarily on secondary data, including newspaper reports, articles and websites that have discussed particular examples and experiences of citizens’ entitlements. In addition, since both authors are Indian citizens who are regis-

tered in the Aadhaar database, they have had some personal experiences of the use of Aadhaar in schemes such as accessing a new phone SIM card, applying for the renewal of a passport, and securing permission for a child to sit for his annual examination. For the data analysis, we examine the text of the identified documents with respect to the three sets of principles identified above as a part of the conceptual framework.

#### 4 The Aadhaar initiative: Technical and institutional dimensions

The Indian Parliament approved Aadhaar in 2016 making into The Aadhaar (Targeted Delivery Of Financial And Other Subsidies, Benefits And Services) Act, 2016 [8]. Primarily based on the inclusion agenda there were two important stated objectives. One, to facilitate inclusion by providing identification documents to all residents, and its lack became an important source of exclusion from the entitlement. Aadhaar was thus seen to be closely tied to improving access to government benefits. Two, Aadhaar was aimed to promote inclusion of citizens to entitlements by reducing corruption (especially duplication in databases). [12] argued that there was no disagreement on the desirability of both these objectives specified in the Act as follows:

*‘to provide for, as a good governance, efficient, transparent, and targeted delivery of subsidies, benefits and services, the expenditure for which is incurred from the Consolidated Fund of India, to individuals residing in India through assigning of unique identity numbers to such individuals and for matters connected therewith or incidental thereto’.*

The Unique Identification Authority of India (UIDAI), a statutory authority, was established becoming responsible for administering this scheme, including enrolment and authentication, operation and management of all stages of Aadhaar life cycle, and developing policy to ensure the security of identity information. The Aadhaar number is a 12-digit random number issued by the UIDAI to the residents of India after satisfying the stipulated verification process. Any individual, irrespective of age and gender, who is a resident of India, may voluntarily enrol to the scheme by providing minimal demographic and biometric information. After controlling through de-duplication, a unique Aadhaar number is generated, and is positioned as the ‘identity platform of the ‘Digital India’ initiative.

The Aadhaar ecosystem includes – the Aadhaar number holder, Registration and Authentication facilities, Authentication Service Agency (ASA), Authentication User Agency (AUA), Central Identities Data Repository (CIDR), Authentication Devices (devices that collect PID - Personal Identity Data). UIDAI has published specifications for the authentication devices that form a critical link with the Aadhaar authentication ecosystem. These devices collect PID from Aadhaar number holders, prepare the information for transmission, transmit the authentication packets for authentication and receive authentication results. Examples of authentication devices range from desktop PCs, laptops, kiosks to Point-of-Sale (PoS)/handheld mobile devices (micro ATMs) and tablets.

##### 4.1. Case vignettes

We describe two case vignettes around the role of Aadhaar in mediating access of citizens to their entitlement of social benefits. The material for this is drawn from published debates in civil society around this issue. The cases are: i) school children’s en-

itlement of mid-day meals; and, ii) a citizen's entitlement of food rations from the public distribution system (PDS)

#### **4.1.1. Mid-Day Meal Scheme**

*'An 11-year-old girl in Jharkhand's Simdega district died of starvation last fortnight, months after her family's ration card was cancelled because it was not linked to their Aadhaar number. With no school mid-day meals available during her school holidays, Santoshi Kumari had gone with barely any food for nearly eight days before she died. (Johari 2016a).*

The family had been out of work for almost two-months, after the Aadhaar number became compulsory for getting work locally under the Mahatma Gandhi National Rural Employment Guarantee scheme. As they were not registered under Aadhaar, they could not find employment under this scheme, which denied them their daily livelihood, coupled with denial of mid-day meals to their kids at school, contributed to the 11 year old's starvation death.

To address child nutrition, the Indian government in 2001 launched the National Programme of Nutritional Support to Primary Education (NP-NSPE). Under this, every child in every government aided primary school was to be served a prepared Mid-Day Meal (MDM) with a minimum content of 300 calories of energy and 8-12 grams of protein per day for a minimum of 200 days in a year. In 2002, the scheme was further extended to cover also children studying under the Education Guarantee Scheme (EGS) and Alternative and Innovative Education (AIE) centres. In 2018, the MDM was covering children up to upper primary classes (i.e. up to VIII) and the name of the scheme was changed to 'National Programme of Mid-Day Meal in Schools'.

On February 28, 2017, the Ministry of Human Resource Development, invoking Section 7 of the Aadhaar Act, issued a notification for the mid-day meal scheme. According to the notification,

*"any individual desirous of availing the benefit under the Scheme...are required to furnish proof of possession of Aadhaar number. ... (Someone) who does not possess an Aadhaar number or has not yet enrolled for Aadhaar shall have to apply for Aadhaar enrolment by 30th June, 2017."*

Further, the notification states that

*"till the time Aadhaar is assigned to such beneficiary benefits shall be given to such beneficiaries subject to the production of the following identification documents."*

*Three documents are required to be produced to prove eligibility:*

- 1. Aadhaar enrolment slip or (b) copy of his/her request made for Aadhaar enrolment.*
- 2. An undertaking from the parent or guardian that the child is not enrolled in any other school.*
- 3. Any one of seven alternative identification documents.*

According to the notification, if the child has not enrolled for Aadhaar he/she is required to produce her enrolment slip as well as two other types of documentation to remain eligible for school meals.

"The use of Aadhaar as identity document for delivery of services, benefits or subsidies simplifies the government delivery process and enables beneficiaries to get their entitlements directly and in a seamless manner," the HRD ministry notification said.

Not only was this a clear blow to country's nutrition programme, which still is reeling under the pressure of reaching out to all children, but serves as an infringement of Right to Food under the National Food Security Act, 2013 [14]. Dreze and Goyal [2], reviewing the MDM, highlighted its two key achievements. First, they facilitate the elimination of classroom hunger. Many Indian children reach school on an empty stomach in the morning, either because they are not hungry at that time or because their parents are too busy to arrange for an early morning breakfast.

Making Aadhaar mandatory for 'entitlement', defies the idea of 'right' and 'entitlement' and creates a bigger dent by pushing needy children away, for whom this was probably the only meal of the day. Drèze and Khera [4] questions this linking: First, in the current form of the Aadhaar Act, forcing children to enroll means subjecting them to lifelong tracking (without consent, as they are minors), without the possibility of opting out later in life (there is no such provision in the Act). Second, there is little or no role for Aadhaar in the MDM programme, and the government only wants to expand the coverage of Aadhaar enrolment, which in itself does not seem to improve the effectiveness of the MDM. The children who eat at government schools are currently enrolled there and should not have to provide any additional proof. Aadhaar, contrary to its stated promise of reducing barriers to access, is potentially creating barriers.

The government argues that Aadhaar will halt corruption, as there have been some reported cases of schools showing non-existent students on their rolls to claim additional funds from the MDM scheme allocation. As the ministry notification said, 'Aadhaar will expose 'ghost students' in schools'. There are other known and effective means to reduce such corruption through community monitoring, social audits, decentralised grievance redressal systems, public display of information on beneficiaries and menus. These means need to be encouraged rather than expect children to carry the burden of corruption, transparency and accountability [1]. Khera [11] further argues, that not only, will this push towards enrolment be hugely disruptive both for MDM programme, but also educational activities in schools as teachers and the (overstretched) school administration will be forced to make arrangements for Aadhaar enrolment.

#### **4.1.2. Public Distribution System**

The public distribution system (PDS) plays an important role in the lives of poor people in India. They tend to keep their ration cards safely, go to the local ration shop every month without fail, and get basic monthly supplies of rice, wheat, kerosene and other sanctioned supplies for their families. They get angry when the basics are 'out of stock', and may accuse the dealer of corruption and selling the supplies in the open market. Their anger is not difficult to understand: in their fragile and uncertain lives, the PDS provides a modicum of food and economic security [3].

In September 2013, Parliament passed the National Food Security Act [14] making the right to food a legal entitlement by providing subsidized food grains to nearly two-thirds of the population [25]. The Act relies on the existing Targeted Public Distribution System (TPDS) mechanism to deliver these entitlements through a multi-level process in which the central and state government share responsibilities for the provision of food. In 2016, government introduced Aadhaar-based Biometric Authentication (ABBA) in the PDS, ostensibly to enhance "efficiency" [5]. The NFSA confers the legal right to subsidised foodgrains for "eligible households." While eligibil-



ity is a household characteristic (ration cards are made for households, not individuals), entitlements are determined on a per capita basis [22]. This requires their Aadhaar number to be seeded onto the PDS database and added to the household ration card. The PoS machine is a handheld device installed at every PDS outlet (“ration shop”) and connected to the Internet [3]. The list of ration cards attached to that outlet, and their respective entitlements, are stored in the PoS machine and updated every month. When a cardholder turns up, the PoS machine first “authenticates” her by matching her fingerprints with the biometric data stored against her Aadhaar number in the Central Identities Data Repository (CIDR). The machine then generates a receipt with the person’s entitlements, which are also audible from a recorded message (if the machine’s voice-over facility is functional and the dealer activates it, which is not always the case). The transaction details are entered by the dealer in the person’s ration card. Meanwhile, the PoS machine generates electronic transaction records that are automatically uploaded on the state government’s PDS website—hereafter the “Aadhaar website.” The PDS outlets are built around a set of “fragile technologies” [5] that need to work simultaneously for successful transaction. These are: 1) Seeding of Aadhaar numbers in the PDS database which is then added to the household ration card; 2) Point of Sale (PoS) machines are used by the dealer to enter the ration card number of the beneficiary’s household in it; 3) Internet connection is required for the successful working of the PoS machine for verification of the ration card number and the beneficiary’s biometric identification; 4) Remote Aadhaar servers verify the ration card number and initiate fingerprint authentication; and, 6) Fingerprint recognition software is used for the beneficiary to prove her identity by submitting to fingerprint recognition in the PoS machine, and upon verification, the PoS machine indicates that the beneficiary is genuine and eligible for foodgrains.

Even though the technological solution sounds very good, but in practice, however, there are a number of possible hurdles [3]. Dreze [5] explains that the process of “seeding” Aadhaar numbers into the list of ration cards is far from trivial: it involves not only entering Aadhaar numbers into the ration-card database, but also “verifying” them (to avoid errors or fraud), and dealing with possible inconsistencies between the Aadhaar and PDS databases (eg, differences in the spelling of people’s names). The limited battery life of PoS machines is a serious problem in areas without stable electricity connections. Internet connectivity is an even more widespread and recurring hurdle, as large areas are still bereft of it, intermittently or permanently. The PoS machine itself is sometimes out of order. Even when all these fragile technologies are functional, the PoS machine may not recognise someone’s fingerprints. For many poor people, this technological infrastructure is contributing to many people being denied access to the PDS.

## 5 Analysis

We present our analysis in this section, drawing upon our three sets of questions presented in the conceptual framework related to access, materiality of technology, intention of the state and associated response of the citizens.

### 5.1 Aadhaar’s role in mediating access, including materiality of technology

As Aadhaar is linking up with different welfare schemes and their respective institutions, the resulting infrastructure is becoming out of control of any single department or entity. There are existing historical conditions under which schemes like the Mid-day Meal and PDS are functioning, and are fraught with institutional challenges of governance, corruption and apathy of those responsible for its implementation. There is the tendency of these institutional challenges being redirected to the technology. Institutional limitations find blame on the technology, which in practice is beyond the control of the implementing department.

During its introduction, the stated aim of Aadhaar was only expected to authenticate the identity of a person by answering the question of “if X is X?”, and this information was not to be shared. It was supposed to help a citizen not having to provide identity documents repeatedly for various welfare schemes. Aadhaar comprises of an elaborate technological paraphernalia, including software solutions (such as de-duplication algorithms capable of searching millions of records), equipment to conduct biometric tests of fingerprints and iris scans, the central database (CIDR) where all data would be stored supported by advanced cyber security means, and the need for high speed and reliable internet to enable the remote locations (where the identification is needed to be done) to send an encrypted message to the CIDR and receive an answer to the identification question. With this increasing complexity, control is transferred to a distance (for example, to the central CIDR database from the ration shop owner), with many intermediary pieces (POS, internet, Ration card, Aadhaar number etc) standing between the person and his/her entitlement, such that exact reasons for an entitlement failure can never be accurately determined. As the plethora of application areas for Aadhaar are increasing from school admissions to phone connections to public distribution and many more, Aadhaar tends to become the hammer looking for the nail.

An important question which analysis reveals is “access for what does Aadhaar enable?” The aim of the Midday meal scheme was to enable hungry students to access food and not support the state to identify ghost students and enhance the coverage of Aadhaar enrolment. Same is the case of the PDS where the aim of the scheme was to enable a household to get their monthly rations to maintain their routine livelihood. By focussing on the access to Aadhaar rather than the benefits of the original scheme (strengthening nutrition or enabling monthly food rations), we tend to lose the purpose of the question of access to what the original scheme was aimed for? Citizen’s legal entitlements such as the National Food Security Act, tend to be challenged by the requirements for Aadhaar such as under the PDS. Should our question of analysis then relate to access to the National Food Security Act or to the enrolment in Aadhaar?

## **5.2 Intentions of the state and associated response of citizens**

The initial stated intention of the state with Aadhaar was merely to provide a technically effective way of identifying Indian residents. However, as the infrastructure has become more widespread and sophisticated, various government departments and schemes have started to adopt it with other intentions of identifying ghost students or weeding out corruption. Standardization, simplification and foolproof identification of residents, representing key modernizing ideologies, are at the heart of these legitimizing arguments to weed out corruption and remove duplications. From being a vehicle to enable access, the use of Aadhaar seems to be supporting, in Scott’s words, the

strengthening of the State's surveillance gaze over its citizens. Aadhaar represents modern technology and ideology and further draws upon and also feeds into high profile and politically charged development discourses such as Prime Minister's Digital India. As the modern infrastructure becomes increasingly available and its use legitimized by politicians, media and technology vendors, the State finds a willing vehicle to enhance its gaze. For example, by making access to pensions to be based on the Aadhaar card, which may deny access of a leprosy suffering patient unable to access her pension.

As pointed out by Khera [11], the eligibility for various welfare programmes requires a person to satisfy conditions of these schemes: e.g., for social security pensions such as old age or widow pensions, the elderly are required to produce proof of age and a widow a death certificate of her husband. A widow with, say, an Aadhaar number, but without her husband's death certificate will continue to be excluded. Scott raises the question of is everyday social life inherently too complex to be standardized and simplified through technological means, taking examples of identification, cadastral schemes and others. Complexity of social phenomenon comes from the everyday practices of daily life, people's culture, values and various others. The Midday Meal scheme is not only about identifying whether a child is eligible or not for his/her meal, but has to be taken into context of the size of the house they come from, whether their parents have guaranteed employment, how far do kids travel to reach school, what diseases and fatalities does malnutrition lead to, and various other conditions, which by definition may be impossible to reduce to a number or represent on a map. As discussed earlier, Raghvendra and Sahay [16] described the futility of trying to impose a static identification of a family which is highly dynamics including births, deaths, marriages, joint family etc. About the response of citizens to the use of Aadhaar, we could argue that most of the people who tend to rely on state delivered entitlements would come from backgrounds of poverty, illiteracy, and suffer from forms of social exclusion of caste, gender and others. By design, the power asymmetry between them and the state would be extreme to mount a credible resistance. As the use of the Aadhaar becomes increasingly embedded, legitimized and taken for granted within the institutional fabric of government welfare schemes, the ability to resist will become even more marginal. This lack of resistance then provides the state with more power to expand the scope and coverage of the schemes. Having said that, our reading of the literature in the area indicates that there various ongoing debates, and pointing to the use of Aadhaar leading to entitlement failures. We do not want to promote a story of gloom and doom about Aadhaar, but instead try to emphasize that it provides a massive technology infrastructure which provides the potential to strengthen the development agenda, provided it is applied sensitively and innovatively. Madon et al [12] have investigated new processes of governance that emerged for distributing subsidised fertiliser based on Aadhaar to low income farmers in an Indian district. They empirically show how this centralized Aadhaar initiative was complemented by knowledge and expertise of local institutions to strengthen fertiliser dispersal to low-income farmers while also providing various value added services. Their study helps to explore the question of how can Aadhaar be made to work in local context and provide added-value.

## **6 Discussion**

In the cases and analysis discussed, Aadhaar is used as a legitimizing device by the state machinery to deal with issues such as of corruption which tend to be historically situated, enabled through unholy alliances between the government and local implementing agencies, and built upon power asymmetries created through issues of gender, caste, money, land and various others. Can technology do away with these deep rooted social and cultural (mal)practices or do they enhance the scope of the same? While we are not able to definitively answer the same, we can argue in its current form they are tending to challenge access of citizens to their entitlements. For example, the mid-day meal scheme was designed to address the endemic problem of malnutrition in the country by providing poor children with at least one square meal, while the state is using the Aadhaar scheme to identify ghost students. From the programme side, we could argue that even if a “ghost” student gets a meal, it is still okay, as it is helping to address the problem of malnutrition which is the larger aim of the scheme. Also, why should the onus of an efficient and corrupt bureaucracy be placed on the citizens? And should not these be addressed through other forms of institutional reforms?

It has been said that the British invented the bureaucracy in India, and the Indians perfected it. The bureaucracy is already punishing in India, as exemplified beautifully by the set of essays by P. Sainath in his classic book “Everybody loves a good drought” [26]. He provides interesting narratives from 10 poorest districts in the country of how a heartless bureaucracy uses all forms of techniques to exclude the poor. For example, one story is of a person from a backward caste who could not avail entitled benefits over his lifetime because the name of the caste was spelt wrongly in the official records. And this was without any mediation of technology. The contemporary technology intervention through Aadhaar should be guarded against further alienation of citizens and human values from the State. Entitlement failures have much larger social consequences, pushing already deprived people into worsening human conditions of hunger, illness, loss of employment and even death. Aadhaar, positioned as a development initiative, should help prevent this from happening, and help move in the opposite direction.

## 7 Conclusion

The Aadhaar scheme is not necessarily problematic, but questions around the intentions and methods used by those implementing it need to be critically discussed and revised where needed. We will conclude by arguing the focus of debates should need to shift to what “needs to be done to make Aadhaar work effectively in practice to support broader development objectives?” The example cited by Madon et al [12] is a step in that direction highlighting the importance of local governance and the enabling of value added services. The criteria for discussing the success or not of Aadhaar should not be primarily in terms of cost savings but in relation to contributing to the human development index. Cost saving figures tend to obscure more than what they reveal. For example, Dreze and Khera [3] describe a World Bank report, 2016, claiming a USD 11 billion saving through Aadhaar as “skating on thin ice,” as the underlying reasons may be due to the use of digital technology more broadly in subsidy transfers, many of which do not involve Aadhaar at all, like the use of smart cards. In many projects, Aadhaar is only one component of a larger infrastructure, making it flawed to attribute the savings only to Aadhaar. In summary, whether we like it or

not, Aadhaar is here to stay, and we all need to engage with the question of how can it strengthen citizen entitlement.

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