



MGNREGA as a Technological Laboratory: Analysing Wage Payment Delays as a Result of Two Digital Interventions

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Abstract

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is India's rural employment guarantee programme that provides 100 days of work to each household and mandates payment of wages within 15 days of completion of work. MGNREGA has been subject to many technological interventions purported to improve efficiency and transparency. Many of these interventions were introduced without any consultation or scientific piloting resulting in violation of workers' rights. We focus on two digital interventions. Firstly, in the financial year 2021–22, wage payments of workers were segregated based on their caste. Notwithstanding delays in wage payments, we find there is a statistically significant difference in the time taken to process payments across caste. This provides an empirical corroboration of how this move created caste tensions at worksites. Just in our sample, the compensation as per law that is payable to workers due to delays by the union government alone is ₹399 million. This is neither acknowledged nor paid. Secondly, we demonstrate that there is no statistically significant difference either in timely payment of wages or in payment rejections between the Aadhaar-Based Payment System (ABPS) and the standard account-based methods. Our analysis is based on 31.36 million transactions across 10 states from financial year 2021–22 crawled from the programme's Management Information System. This is the first large-scale data-based evidence debunking officially stated claims of timely payments due to ABPS. We also examine official government circulars, documents retrieved using Right to Information responses combined with our immersive fieldwork to underscore our findings. In summary, we argue that any digital technology introduced in MGNREGA or any other social policy must be done through a consultative process, independent audits, giving centrality to workers' rights.

Keywords NREGA · Aadhaar · Social security · Technological intervention · Direct benefit transfer payments · Budget crunch

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1 Introduction

The rights-based framework in welfare resulted in a slew of progressive legislations by the Indian state in 2005. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is one such legislation. It guarantees 100 days of employment per year at minimum wages on demand to every rural household. It includes several progressive provisions such as an unemployment allowance to be paid if work is not provided within 15 days of demanding it, and a compensation to be paid to workers for each day's delay if wages are not paid within 15 days of completion of work. Each household has a unique job card which is essential to get work and maps each household's work demand and wage payments. Despite budget constraints and numerous implementation challenges, it has had a far-reaching impact. The World Bank recognised MGNREGA as the world's largest public works programme, providing social security to as much as 15% of the country's population (World Bank 2015). To ensure proactive public disclosure of information, MGNREGA became the first programme to have a real-time online transaction-based system referred to as the Management Information System (henceforth MIS). Through the MIS, there has been a digitisation of every process within MGNREGA—from the registration of a worker and their demand for work, to the work allotment, work attendance records, and finally the payment. The MIS also makes all this information available online at various levels of disaggregation and it is just one of the suite of information and communication technologies for development (ICT4D)¹ that have become central in the implementation of MGNREGA.

ICT4D has been envisioned to have a transformative potential in the citizen-state relationship to create a more empowered society (Guida & Crow 2009). On the use of ICT, the Organisation for Economic Co-operation and Development (OECD) defines digital government as 'the use of digital technologies, as an integrated part of governments' modernisation strategies, to create public value.' Examples of enhancing 'public values' are reduction in corruption, improvements in efficiency, accountability, etc. (Bannister & Connolly 2014). It is in this spirit that governments in India, both states and the union government, have introduced digital technologies across a plethora of public programmes. There is some consensus in using the 'public value' framework in assessing digital technologies in governance (See Jorgensen & Bozeman 2007; Harrison et al. 2012; Cordella & Bonina 2012) for instance. Achievement of 'public value' in this context must not only imply higher efficiency for the government but must also result in improved transparency, inclusion, participation, and such social values (Twizeyimana & Andersson 2019).

For the Indian state, assuming an idealised conception of efficiency as in the private sector, the adoption of ICT in welfare programmes has become synonymous with the idea of 'good governance'. And this has steadily resulted in a reorientation of citizens into customers turning the state into a service provider (Chaudhuri & Konig 2018). However, intrinsic to MGNREGA is a means to enhance capacities

¹ We use the terms ICT4D and digital technologies interchangeably in this paper.

of citizens to have a better claim-making with the state. This is a messy process, wherein the MGNREGA workers are constantly negotiating the uneven ‘institutional terrain of the state’ to activate citizenship which is both a set of rights and a set of practices (Kruks-Wisner 2018). As Falcao (2024) observes, the conscious shift by the state from ‘inputs and processes to outputs and outcomes’ has exacerbated this tension with little or no attention given to assess the ‘design-actuality gap’ (Heeks 2022).

In this paper, using a large-scale empirical exercise in conjunction with immersive field work and analysis using Right to Information (RTI) responses from the government, we demonstrate how two major digital interventions in MGNREGA have compromised on public values and increased the design-actuality gap. In the rest of this section, we provide a short explanation of the two digital interventions called ‘Aadhaar-Based Payment Systems (ABPS)’ and ‘trifurcation of wage payments by caste’. Our analysis is based on a total of 31.36 million MGNREGA wage transactions sampled from 327 blocks² across 10 states from the financial year (FY) 2021–22. The total amount involved in these transactions is ₹46.02 billion. Just in our sample, the total compensation payable to workers due to delays caused by the union government is ₹399 million. This is neither accounted for in the MIS and nor paid. Assuming this trend holds true for all the transactions of the states in our study, then just the unaccounted delay compensation caused solely by the union government is around ₹4 billion. This can be one metric on the extent of violation of workers’ rights.

The presence of intermediaries (commonly known as middlemen) and petty corruption has been a chronic problem in MGNREGA. Digital tools to curb these have been thought to be attractive, but belief has led to a cult of techno-solutionism. However, such a techno-solutionist approach has pitfalls as it does not account for local contexts and can, in fact, create newer intermediaries and new forms of corruption (Vivek et al. 2018; Hanbal et al. 2023). Most notable among digital interventions to improve efficiency, reduce intermediaries, and prevent corruption has been the introduction of Aadhaar, India’s biometric-based digital identity platform, at multiple levels in MGNREGA, and in other programmes (Nyst et al. 2016; Masiero & Arvidsson 2021).³

Aadhaar is a unique identification number given to all Indian residents by the Unique Identification Authority of India (UIDAI). During Aadhaar enrolment, demographic details of individuals along with their biometric fingerprints and iris scans are collected as they are considered to be unique identifiers of individuals. These details are stored in the Centralised Identities Data Repository or the Aadhaar database. An objective of having a unique ID was to curb corruption in accessing welfare programmes by eliminating “ghost” and “fake” individuals. To ensure that an individual working in MGNREGA is not a ghost or a fake, the government has linked the MGNREGA job card database with the Aadhaar database. When there

² Block is a subdistrict unit. Multiple blocks form a district and multiple districts constitute a state.

³ Aadhaar is a 12-digit unique identity number that can be obtained by residents of India, based on their biometric and demographic data.

is a mismatch in the two databases, the government gives primacy to the Aadhaar database and any mismatch is considered to be a “ghost” or “fake.” For the government, this is a victory, since so many “ghost and fake beneficiaries” have been successfully removed, and inclusion errors addressed. However, multiple researchers and activists have found that in a significant number of cases, the deletion was wrongful, and has led to the exclusion of rights (Buddha & Tamang 2023; Bhaskar, Sarkar & Singh 2024).

The Aadhaar infrastructure has been used for cash transfers through the ABPS. To direct a payment using Aadhaar, there are at least three steps. Firstly, a worker’s Aadhaar number must be linked to her job card. Secondly, her Aadhaar must be linked to her bank account. Thirdly, the Aadhaar number must be linked correctly through her bank branch with a mapper of the National Payments Corporation of India, which acts as a clearing house of Aadhaar-based payments. Aadhaar becomes the financial address of the individual and cash transferred by the government gets deposited to the last Aadhaar-linked bank account. This model of sending payments via Aadhaar has been operational from 2016, but it existed as an option alongside the well-understood system of transferring payments called account-based payments. On 1 January 2024, after multiple deadline extensions, the union government mandated the use of ABPS as the exclusive channel for transferring wage payment in MGNREGA (MoRD 2023a). This paper is the first large-scale attempt to evaluate some efficiency claims made by the government for using ABPS.

Wage payments can get rejected when, due to some technical issues, money is not transferred to the workers’ account even though it was transferred by the union government. Both account-based and ABPS payments can get rejected. However, the former can be resolved locally through the computer operator’s login at the block but rejections due to ABPS are centralised and harder to resolve. We find no statistically significant difference in the extent of rejections by payment mode.

We analyse a second, short-lived but pernicious technological rejigging in the MGNREGA payment infrastructure: the caste-based trifurcation of wage payments. In 2021, the union government had issued a circular to segregate wage payments based on the caste category of the workers. This was done by modifying the existing electronic channel of payments and creating three different pathways; one electronic pathway for Schedule Caste (SC) workers, one for Scheduled Tribe (ST) workers and one for workers of ‘Other’ caste category. As per multiple news reports, this not only led to tensions along caste and communal lines at worksites but also increased the workload for field officials (Moudgal 2021). This paper is also the only large-scale analysis of the impact of this segregation.

Borrowing a metaphor from Veeraraghavan (2022), by using a ‘flashlight’ to ‘see the state’, our objective to critically examine these two technical initiatives is to demonstrate that digital technologies, in and of itself, need not lead to improved public values. We use the time taken by the union government in transferring wages to MGNREGA workers as our metric. As per the Act, the union government is mandated to transfer wages within seven days of receiving electronic invoices from the constituent states. Our outcome variable is the percentage of transactions for which the union government completed its payment within 7 days. To be more conservative, we also use the percentage of transactions completed within 15 days. We also

demonstrate that a move to make ABPS mandatory contradicts the efficiency or transparency arguments propounded by the union government.⁴ On the contrary, we argue that it has led to more opacity without any gains in improving timely payments. The state's persistence in creating a positive narrative around Aadhaar is what Falcao (2024) refers to as an example of *digitalwashing*.⁵

In Section 2, we briefly discuss the evolution of the wage payments process in MGNREGA and discuss the two interventions we study—segregation of payments on the basis of caste and ABPS—in detail. In Section 3, using government circulars and responses from the RTI act we contrast the union government's narrative on ABPS juxtaposed with realities based on voices from the ground and programme data. Section 4 provides the methodology, sampling, and model for our analysis. The results are shown in Section 5, and Section 6 concludes with a discussion on the findings followed with Appendix with additional results.

2 MGNREGA Wage Payments and Delays

2.1 Brief Timeline of the MGNREGA Wage Payment System

When MGNREGA started, the wages of all workers in the panchayat were received by the Gram Panchayat (GP) administration's account and were disbursed in cash to workers in a public place. Following this, in 2008, state governments were instructed to open accounts for MGNREGA workers in banks or post offices. Payments were now to be made by the GP administration in the form of account payee cheques to workers. This was considered an important step in reducing leakages and in ensuring transparency.

2012 was the year when the Ministry of Rural Development (MoRD) introduced the electronic Fund Management System, or the e-FMS. The e-FMS enabled the payment of wages directly to workers' accounts by the state government. The 2013 MGNREGA guidelines released by the MoRD emphasised mechanisms for increasing transparency: wall paintings, wage payment slips, SMS alerts, and door-to-door dissemination of information were suggested to ensure worker awareness. Over time, these measures have disappeared. Post offices have also slowly been phased out as a payment agency.

⁴ For document analysis we examine official communication released by the MoRD including letters, circulars, and notifications. Additionally, we analyse RTI responses submitted by the MoRD. The RTI applications we examine have been compiled in a Google Drive folder here. <https://drive.google.com/drive/folders/1RrlqgvECcQocCzeulGRMFdDaRZmo8yYe>

⁵ A term coined by Vanita Leah Falcao in her PhD thesis from looking at the implementation of the maternity entitlements programme in Jharkhand. Quoting her "Digitalwashing is akin to the concept of greenwashing. Greenwash is defined by the Oxford Dictionary of Environment and Conservation as, 'A term (combining green and whitewash) that environmentalists use to describe the activity (for example, by corporate lobby groups) of giving a positive public image to practices that are environmentally unsound.'"

Since 2016, the MGNREGA payment system has been further centralised with the introduction of the National electronic Fund Management System, or the Ne-FMS, which is still in use. The Ne-FMS enabled the union government to directly transfer wages to the workers' bank accounts. There are two channels in Ne-FMS: account-based or Aadhaar-based (ABPS).

2.2 MGNREGA Wage Payment Process and Delays

The MGNREGA wage payment process begins when a period of work ends, as designated by an electronic muster roll⁶ (eMR). At the end of the designated work period, attendance and the amount of work done are marked on the eMR, and it is entered on to the MGNREGA MIS. Section 3 of the Act says that the wages for a completed muster roll for work must be paid within 15 days of completion of work, failing which the workers are entitled to compensation (0.05% per day of wages earned) for each day's delay.

There are two broad stages in the wage payment process. Stage 1 is the constituent state government's responsibility, and stage 2 is the union government's responsibility. Stage 1 begins with the closure of the eMR and data entry on the MIS by the block-level computer operator. Subsequently, a wagelist and an electronic Funds Transfer Order (FTO) are generated containing the workers' identifying details and wages to be paid. The FTO requires two digital signatures by panchayat/block officials. Stage 1 ends with the signatures on the FTO, which are interpreted as the approval to pay workers. As per official guidelines, Stage 1 must be completed within 8 days.

Stage 2 begins once the approved FTO is digitally sent on to the union government, after which the MoRD transfers the wages directly to the bank account of the workers. Stage 2 is mandated to be completed within 7 days. Stage 2 delays are not easily obtained on the MIS, but we have been able to do so by crawling and combining multiple reports. Stage 1 of 94% of wage payments in FY 2021–22 was done within 15 days. While Stage 1 delays have reduced over time, Stage 2 delays continue to be unaccounted and high (LibTech India 2021).

Since the union government's reasoning for the introduction of ABPS is on grounds of 'increased efficiency' in wage payments (detailed discussion in the subsequent sections), we make a quick comment on the existing literature on wage payment delays in MGNREGA here. Analysis of 9 million MGNREGA transactions from FY 16–17 showed that only 21% of the wage payments were fully completed (stage 1 + stage 2) within 15 days (Narayanan et al. 2019). These were acknowledged by the Ministry of Finance in an internal memorandum (Department of Expenditure 2017) and it noted that the delays were due to 'insufficient funds'. Based on these, the Supreme Court gave strong orders to the union government to pay the workers for the full extent of delay, but the delay compensation norms continue to be violated

⁶ Muster roll is an attendance register containing job card details of workers and the number of days a worker has worked.

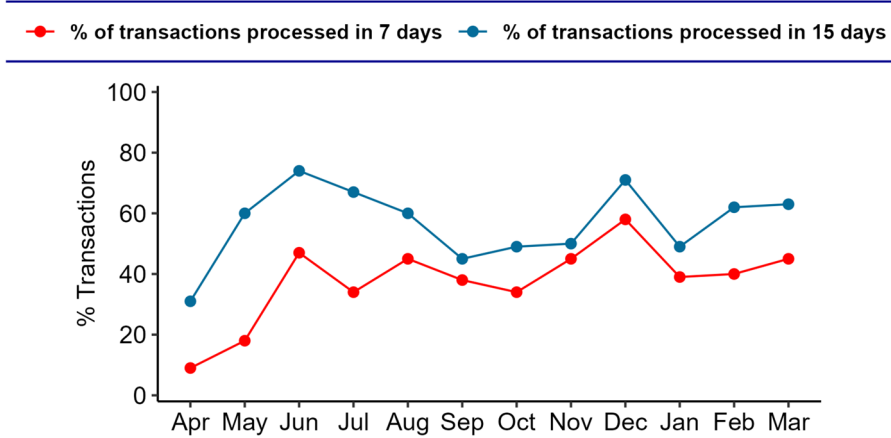


Fig. 1 Percentage of transactions processed within 7 and 15 days over the months in FY 2021–22
Source: Author’s own data

(The Supreme Court of India 2018).⁷ Analysis of 17 million transactions from the first half of FY 2021–22 showed that only 29% of transactions had been processed within the stipulated 7 day period by the union government (LibTech India 2021). And, contrary to the claims made by the MoRD (MoRD 2023b), adequate funds are not released throughout the financial year as per the demand for MGNREGA work. Figure 1 illustrates this for FY 2021–22. It shows how funds dried up around September and despite additional fund allocation in quarter three (MoRD 2020), funds again dried up by February–March. Further, one-fifth of each year’s allocation in the last five years have been spent in clearing pending liabilities of previous years (PAEG 2023). Therefore, in line with earlier research, our current findings also suggest that delays in wage payments are an artefact of inadequate funds and not technology designs.

Lack of adequate budget allocation not only leads to a violation of the timely payment of wages but also leads to suppression of work demand. Media reports have previously highlighted how Programme Officers were instructed by the MoRD to not generate any more work since funds were drying up (Sethi 2016). Even during the pandemic, a four state study estimated that 39% of the households in study blocks could not get a single day of work despite needing work (Azim Premji University 2022). The study further showed that to meet the full extent of work demand, as a conservative estimate, the budget allocation should have been at least four times more than what was allocated. This is in line with the demands of various academics and citizen action groups that the MGNREGA budget should at least be 1.2% to 1.5% of the gross domestic product (GDP). However, the budget allocation in FY 2021–22 was merely 0.41% of the GDP which declined further to 0.2% of the GDP

⁷ It was only after the Supreme Court judgement that the MoRD began to show stage 2 delays on the MIS.

in FY 2023–24 and in FY 2024–25. Even during the pandemic year of 2020–21, it was only 0.56% of the GDP.

2.3 Caste Trifurcation in MGNREGA Wage Payments

In March 2021, the MoRD issued a circular modifying the wage payments architecture further by segregating the payments by the caste category of the workers (MoRD 2021). In this paper, we refer to this as ‘caste trifurcation’, since the payments were divided into three channels.

As per the MGNREGA MIS, there are three caste categories: SC, ST, and General (Other). Until this circular was introduced, two FTOs were generated, one each for account-based payments and for ABPS payments for all the workers who had worked in the same eMR. All their wages were processed together. After the caste-based payments circular, separate FTOs were generated for each category of worker, implying that account-based and ABPS FTOs were generated for each caste, leading to six FTOs for each eMR. Now, wages of SC, ST, and ‘Other’ workers were paid at different times, even if they had worked together in the same eMR. The difference in payment time varied substantially, with there being differences of more than a month in some cases. These also led to an increase in administrative workload for computer operators at the blocks..

While affirmative action is important, trifurcation of MGNREGA wage payments by caste did not help marginalised communities. Across states, there were reports that this move led to increased friction between communities, and even communal tensions in areas where the ‘Other’ category was predominantly Muslim (Moudgal 2021). Panchayat functionaries like MGNREGA Mates reported facing accusations of casteism, even though they have no role in the wage payments process.

The MoRD never gave a clear reason for this move. A statement was released after news reports highlighted problems being caused by the trifurcation, wherein the MoRD merely said “For better accounting purpose, it has been decided, in consultation with Department of Expenditure, to have a category-wise (SC, ST and Others) wage payment system” (Sood 2021). The circular was revoked on 1 November, 2021, but continued to be operational till the end of the financial year 2021–22 (Jebaraj 2021).

2.4 Account and Aadhaar-Based Payments

There are two modalities for transferring wage payments to MGNREGA workers: account-based payment and ABPS. Account-based payments are simple bank transfers using the worker’s name, her account number, and the bank’s IFSC. These are linked to each worker’s job card number. Any changes or corrections in the account-based payment systems can be done locally at the block computer office using the block computer operator’s login credentials.

ABPS uses the worker’s Aadhaar number as their financial address and the mechanism has been spelled out in the Introduction. While the process of shifting towards ABPS started in 2013, a major push came from the government from 2014–15. This

was a part of the National Democratic Alliance (NDA) government's flagship Jan Dhan, Aadhaar, Mobile (JAM) trinity. In January 2023, the MoRD released a circular mandating the use of ABPS for all MGNREGA wage payments across the country (MoRD 2023a). At the time, only 43% of MGNREGA workers were eligible for ABPS payments. Since then, the MoRD has extended the deadline for mandatory Aadhaar seeding and ABPS multiple times because of public pressure and the difficulties faced by states in meeting targets. Our field work, also corroborated by news reports, suggest that officials are deleting job cards in order to show higher compliance with ABPS (Nair 2023). After multiple deadline extensions, ABPS was finally mandated on 1 January 2024. As of 22 August 2024, 28% of all workers were still ineligible for ABPS wage payments.⁸

3 The ABPS Timeline

In this section, we outline the various official communications by MoRD as well as responses obtained through RTI filed by different people.

The MoRD issued a notification in 2017 for MGNREGA workers to get an Aadhaar if they already do not have one (MoRD 2017). At this point, Aadhaar was not mandatory in MGNREGA. Subsequent circulars from 2017 till 2022 pushed administrators to integrate seed Aadhaar numbers of workers with their job cards. This process culminated on 30 January 2023, when the MoRD mandated the APBS for all wage payments in MGNREGA with effect from 1 February 2023 (MoRD 2023a).

In different circulars, orders and in RTIs, the MoRD has given varying reasons for ABPS payments being 'better' than account-based payments. At different times, the MoRD has claimed that ABPS are more efficient, they improve transparency, and they reduce rejections in payments. However, till date, no ministry in the union government has released any cogent paper with data and methodology to provide evidence for these claims. On the other hand, there is a significant body of workers' voices and other evidence from the ground that shows ABPS payments actually reduce transparency and make payment rejections much harder to resolve.⁹

Figure 2 presents a brief timeline of the MoRD's 'shifting goalposts' when it comes to the ABPS. Each of the quoted statements is taken verbatim from either MoRD releases or from responses obtained using the RTI.

The justification given by the MoRD for preferring ABPS can broadly be classified into two reasons, with multiple mechanisms for achieving each—1. Increased efficiency and savings, and 2. Increased transparency.

⁸ Source: MGNREGA MIS Report 1.1.9, Aadhaar authentication status report, accessed 30 June 2023. https://nreganarep.nic.in/netnrega/AdhaarStatus.aspx?lflag=eng&fin_year=2024-2025&source=national&labels=labels&Digest=O57D2k1AxQj89t4Y5xNiBg

⁹ Worker testimonies from 8 states of India during a 100-day protest organised by NREGA worker collectives including violation of rights due to ABPS can be found here: <https://tinyurl.com/55jev8af>

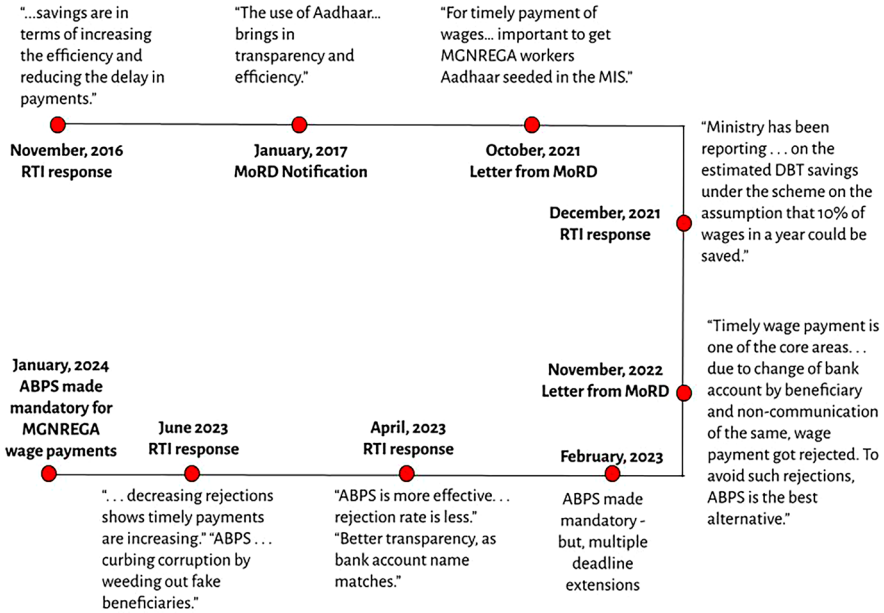


Fig. 2 Timeline of shifting goalposts in ABPS. Source: Compiled on the basis of official MoRD communications and RTI responses between 2016 and 2023

3.1 Increased efficiency and savings

We cannot clearly discern on what precisely is meant by ‘efficiency’ for the MoRD based on Fig. 2. It can be assumed to be one of the following: (a) removing ‘ghost workers’ or (b) making timely payment of wages or (c) decreasing rejections in wage payments.

The removal of ‘ghost workers’, or fake job cards, is an important exercise, and can lead to savings for the government by reducing corruption. As per official claims, this can only be done by seeding one’s Aadhaar to one’s job card. Our fieldwork shows that in this quest to link Aadhaar with MGNREGA job cards, a significant number of real workers are being deleted off MGNREGA. See also Bhaskar et al. (2024); Buddha and Tamang (2023) and Nair (2023). Further, if we assume that the union government’s efficiency claims are based on timely payment of wages or on reduced rejections, then our earlier work and this paper using sample sizes of millions of transactions debunk that claim.

With regard to claims on savings, in an RTI response in 2021, the MoRD also claimed that an “estimated cumulative savings/benefits due to Aadhaar in MGNREGA till March, 2021 is Rs. 33,475 crores.” However, there has been no clear answer regarding the methodology used to arrive at these numbers. The MoRD’s response was a statement which only said “Ministry has been reporting DBT Mission on the estimated DBT savings under the scheme on the assumption that 10% of the wages in the year could be saved.” The savings due to Aadhaar accordingly

appear to be an ‘assumption’ more than any mathematically rigorous calculation. See Venkatanarayanan (2017) for more on savings in MGNREGA due to Aadhaar.

3.2 Increased Transparency

The second big reason claimed for the shift to ABPS is an increase in transparency. Again, as with efficiency, there has been no clarity on how to demonstrate it. In response to an RTI sought by economist Jean Dréze in April 2023, the MoRD responded by saying that ABPS leads to “better transparency as in response of ABPS we get the same beneficiary name for which payment was requested and in account-based payment the beneficiary name may not be the same in joint bank account cases.” There has been a steady decline in joint accounts for MGNREGA workers, despite the ABPS mandate. There is no evident justification on the role played by Aadhaar in having a single account instead of a joint account. As such, the most recent justification for ABPS also seems obfuscatory.

For the workers, a transparent system must show workers what their wages are, when they were paid and to which account they are credited to (Buddha et al. 2021). Although the Janmanrega app, launched recently by the MoRD, might be a useful step in that direction, there is no specific role played by ABPS in this. Under ABPS, even block computer operators can usually only tell whether wages are credited but not which bank account the wages are credited to. This poses hardships for workers. The issue of the same person having multiple bank accounts is common across much of rural India. Many people we have encountered in our work across Jharkhand, Andhra Pradesh, Telangana, Rajasthan, and other states, have at least 3 bank accounts. The bank account to which a worker’s Aadhaar is linked to, may or may not be the account whose details one submitted while registering for a scheme. These are called diverted payments.¹⁰ ABPS payments can also result in misdirected payments¹¹ which are nearly impossible to detect and resolve. Both of these are discussed in Section 6.

4 Methodology

4.1 Methodology

In this paper, we use standard least square regression to examine the impact of two interventions in the wage payment system: (a) payment mode, ABPS or

¹⁰ Diverted payments are payments that are diverted to a worker’s alternate bank account, which is not the same account they had provided while registering for MGNREGA. Since worker’s can often have multiple accounts, and not know about all of them, diverted payments can be difficult to trace.

¹¹ Misdirected payments are payments wherein one’s wages are credited to another individual’s account. Since the money is credited as per the system, it is difficult to even notice the misdirection, and very difficult to recover the wage and send it to the correct account.

account-based, and (b) the trifurcation of payments by caste, on the time taken to complete stage 2. The data for the analysis are from the financial year 2021–22 when the trifurcation of payments by caste was used. The same dataset also provides information on the mode of payment, that is account-based or ABPS. Due to server limitations, we were unable to analyse the counterfactual question of whether stage 2 outcomes differ across caste groups after the circular's withdrawal.

Firstly, we examine if ABPS led to any efficiency gains in terms of a reduction in time taken to process stage 2 of payments. We use the percentage of transactions completed within 7 and 15 days as our outcome variable. Secondly, we analyse whether ABPS payments have resulted in a statistically significant reduction in percentage of transactions rejected.

Other factors that might also influence the duration of payment and rejections like the quarter/month of transaction, the state in which the worker worked, and the volume of transactions are used as controls in our analysis.

It has been historically observed that the pattern of delays in wage payment is not uniform across the financial year. Funds dry out as the financial year progresses. Figure 1 shows this for FY 2021–22. In general, one does not observe delays in wage payments in the first quarter of the financial year. Delays tend to accumulate onwards from the second quarter. Sometime around the third quarter, the union government releases some additional funds when delays reduce partially and one observes delays again in the fourth quarter. Thus, the quarter/month of transaction is likely to have an impact on the percentage of payments processed within 7/15 days.

Further, even though stage 2 is a prerogative of the union government, there might be variations across states due to administrative preparedness, extent of backwardness and other factors that impact the time taken to process payments. In addition, the number of transactions to be processed can be used as a proxy of the burden of processing payments on government officials, which is likely to have an impact on the overall time taken to process payments.

We use an Ordinary Least Square (OLS) regression analysis model.¹² The model can be specified as:

$$Y_{pcsq} = \beta_0 + \beta_p X_p + \beta_c X_c + \beta_s X_s + \beta_q X_q + \beta_t X_{pcsq} + \varepsilon_{pcsq} \quad (1)$$

where

Y_{pcsq} is the percentage of transactions processed within 7 days/per cent of transactions processed within 15 days for payment type p for caste c in state s and quarter q .

X_p is a dummy variable for the payment type with account-based payments as the base category.

X_c is a set of dummy variables for caste category which can be SC, ST or 'others' with 'others' caste as the base category.

X_s is a set of dummy variables for states with Bihar as the base category.

X_q is a set of dummy variables for quarters with quarter 1 as the base category.

¹² The model is restricted by data availability, and we may have left out other explanatory variables.

Table 1 Sample size in different states *Source:* Author's own data

State	Number of transactions (in millions)		Transactions in sampled blocks as a % of total
	In all blocks	In sampled blocks	
Bihar	14.92	1.13	7.6
Chhattisgarh	30.96	5.70	18.4
Jharkhand	17.50	1.47	8.4
Karnataka	18.38	1.87	10.2
Kerala	22.70	1.64	7.2
Madhya Pradesh	46.83	8.29	17.7
Odisha	24.46	2.36	9.6
Rajasthan	40.95	4.03	9.8
Uttar Pradesh	33.89	2.91	8.6
West Bengal	26.61	1.97	7.4
Total	227.20	31.37	11.3

X_{pcsq} is the number of transactions for payment type p for caste c in state s and quarter q .

ε_{pcsq} is the vector of random error on the percentage of transactions processed within 7 days/percentage of transactions processed within 15 days.

In addition to the model discussed above, we perform robustness checks using alternative models. Firstly, we use an equation similar to the one suggested above using month of transaction instead of quarter of transaction. Secondly, we apply a logit regression approach, where the dependent variable is a dummy indicating whether the transaction was processed within 7 days. The other dummy variables discussed above are included as independent variables in this model.

The model for percentage of transactions rejected can be specified as:

$$Y_{pcsq} = \beta_0 + \beta_p X_p + \beta_c X_c + \beta_s X_s + \beta_q X_q + \beta_t X_{pcsq} + \varepsilon_{pcsq} \quad (2)$$

where

Y_{pcsq} is the percentage of transactions rejected for payment type p for caste c in state s and quarter q .

Other variables are similar to Eq. 1.

4.2 Data and Sample

We have crawled the data from report 8.1.1 (FTO status report) and the 'Job Card Register' in the NREGA MIS.¹³ The FTO status report gives information on the status of FTOs once the FTOs have been electronically sent to the union government. This report gives details of each wage transaction, that is the name and job card ID

¹³ Data used for the analysis were downloaded on 26 July 2022.

of the worker, the amount of wages paid/to be paid, the date when the FTO was sent to the union government, etc. In addition, we get information on whether the transaction is pending, processed or rejected and the corresponding date. The job card register has basic demographic details of each job card holder. We merge the FTO status report with the job card register.

We use stratified sampling to download transactions for 10 states for the financial year 2021–22. The 10 states are Bihar, Chhattisgarh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Rajasthan, Odisha, Uttar Pradesh, and West Bengal. These states have high volumes of MGNREGA work. All high volume states have not been selected but our arguments are likely to hold without loss of generality. Within each state the sampling was done in two stages. Firstly, we randomly sample one block per district in each of the 10 states and then download all transactions for each sampled block. This gave us a total of 31.36 million transactions sampled across 327 blocks.¹⁴ The total wages involved in these transactions are ₹46.02 billion. Table 1 shows the total number of transactions that have happened in that state and the number of transactions sampled in those states. The percentage of transactions sampled ranges between 7% and 9% for all states except for Chhattisgarh and Madhya Pradesh where they are higher.

The date on which an FTO is electronically sent to the union government is called the transaction date. The date on which the FTO is processed by the union government and wages are transferred to the workers' account is called the processed date. For rejected payments, the processed date refers to the date on which an attempt to transfer the wages was made. The difference between the processed date and the transaction date gives us the days to complete stage 2. From this, we calculate the percentage of transactions for which stage 2 was completed within 7 days and 15 days, respectively. For pending transactions, the date when the data were downloaded is used as a proxy for the date when the transaction was processed. Note that for both pending and rejected transactions, the processed date we are using is imputed as the date on which money was finally credited to the workers' account, of pending and rejected transactions is not observable. However, since the data were downloaded more than fifteen days from the last transaction date, the outcome variable will not be affected for pending transactions. For the model used to examine whether the introduction of ABPS can lead to a reduction in rejections, we use percentage of transactions rejected as the outcome.

The focal variables used in the analysis are caste and payment type. We derive the payment type from the FTO number which is alphanumeric. FTOs containing the string "APB" mean that they are ABPS payments. We extract the month from the transaction date to get the transaction month and calculate the four quarters from them, starting with April.

¹⁴ Data on some blocks/districts are missing due to technical issues.

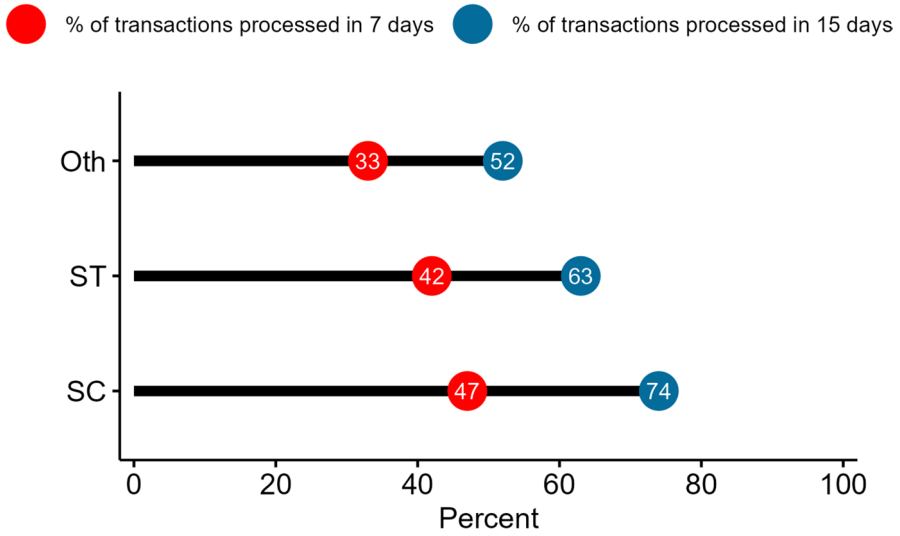


Fig. 3 Percentage of wage payments processed within 7 and 15 days for workers from different caste categories *Source:* Author's own data

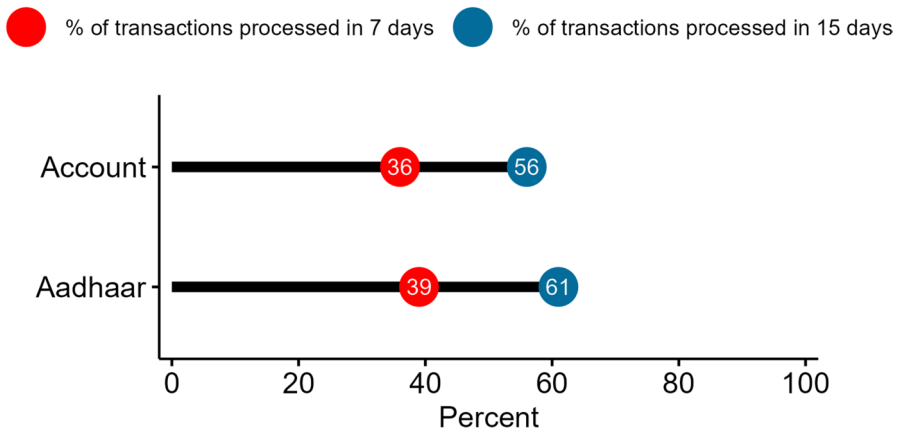


Fig. 4 Percentage of wage payments processed within 7 and 15 days for workers receiving payments through different modes *Source:* Author's own data

5 Results

5.1 Impact of Tinkering with the Wage Payments on Time Taken to Process Payments

Figure 3 shows that the FTO trifurcation by caste led to a significant difference in the time taken to process payments for the three categories. While only 33% of

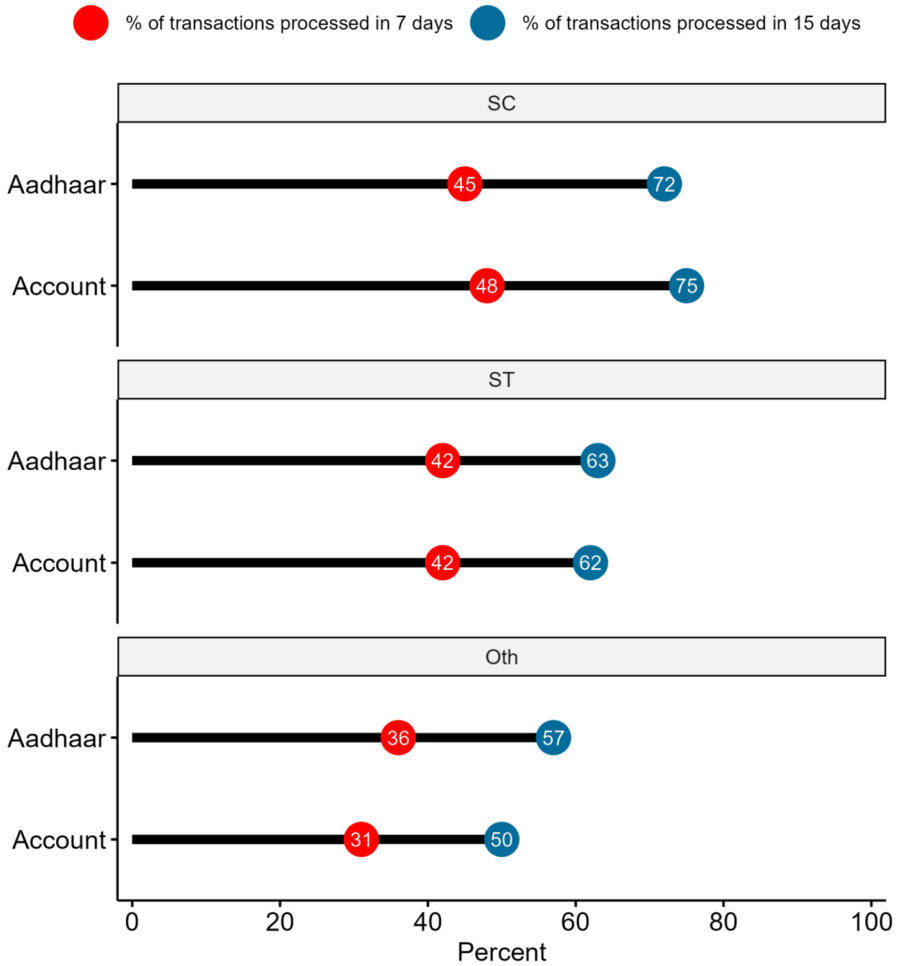


Fig. 5 Time taken to process wage payments for different caste categories and different payment types
Source: Author's own data

the payments for 'other' caste category were processed within the mandated 7 day period, the corresponding figures for STs and SCs are 42% and 47%, respectively. Even if we consider a 15-day threshold, which is stage 1 plus stage 2, only 52% payments were processed for the 'other' caste category compared to 63% for STs and 74% for SCs.

Figure 4 shows the percentage of payments processed within 7 and 15 days across the two payment types. The difference between the time taken to process payments is marginal. 36% of account-based payments were processed within 7 days compared to 39% of ABPS payments. Figures 5 and 6 show the comparison of the percentage of transactions processed within 7 and 15 days between the two payment types across caste categories, and states. One finds that there is no statistically significant

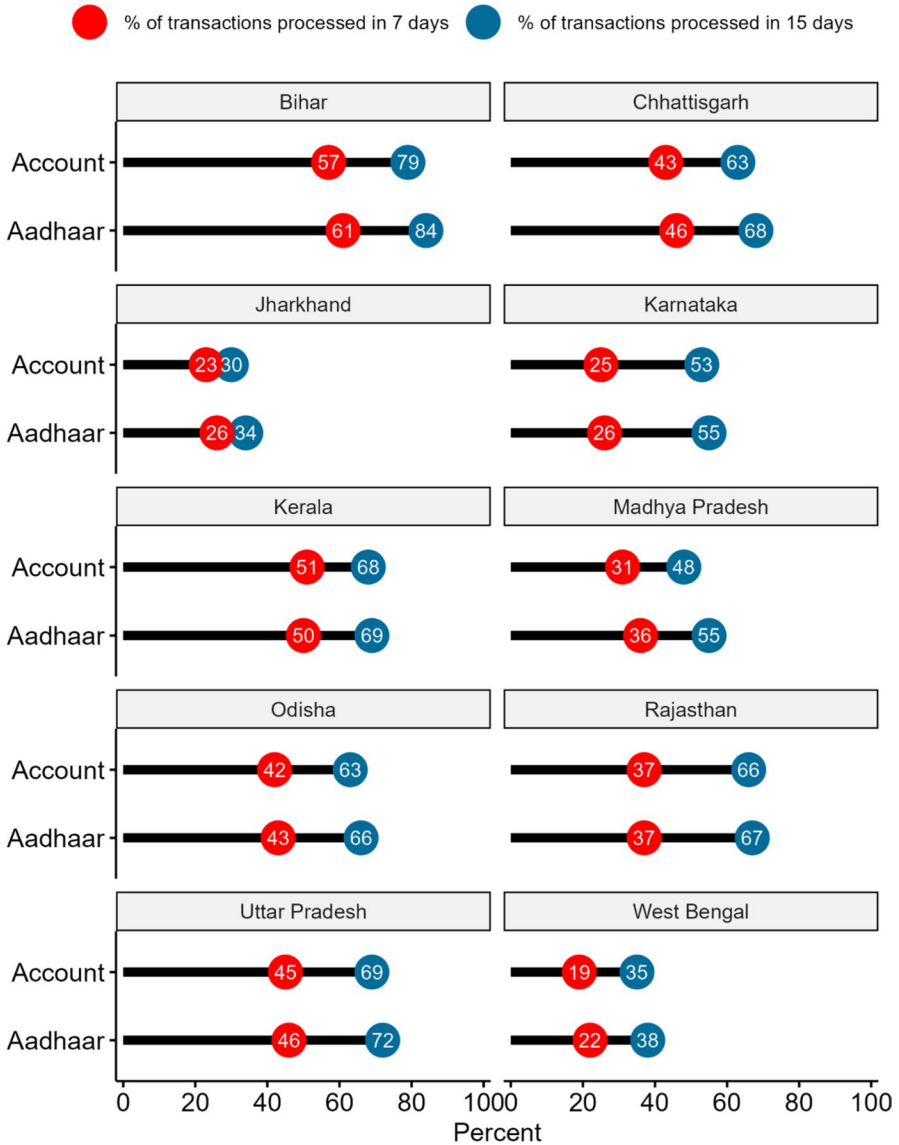


Fig. 6 Time taken to process wage payments for different payment types in selected states *Source:* Author’s own data

difference between ABPS and account-based payments across caste categories or states.

Table 2 presents a summary of regression results for the model as given in Eq. 1. The detailed results are presented in Tables 5 and 6 in the Appendix. The coefficients for both the caste dummies are positive and significant at 5% level of significance. Controlling for quarter of transaction, state, and volume of transactions, compared

Table 2 Summary of regression results with percentage of transactions processed within 7 and 15 days as the dependent variable

Focal variable	Dependent variable	
	% of transactions processed within 7 days	% of transactions processed within 15 days
Caste (SC = 1)	8.880** (3.352)	14.184*** (3.724)
Caste (ST = 1)	9.376** (3.205)	8.827* (3.561)
Payment type (ABPS = 1)	-0.364 (2.422)	0.142 (2.692)

Standard error in parenthesis

$0 < = *** < 0.001 < ** < 0.01 < * < 0.05$

Table 3 Rejections by payment type

Payment type	Number of transactions (in millions)	Number of transactions rejected (in millions)	% of transactions rejected
Account-based	18.94	0.54	2.85
ABPS	12.41	0.26	2.10
Total	31.35	0.8	2.55

Table 4 Summary of regression results with % of transactions rejected as the dependent variable

Focal variable	% of transactions rejected
Payment type (ABPS = 1)	-0.408 (0.626)

Standard error in parenthesis

$0 < = *** < 0.001 < ** < 0.01 < * < 0.05$

to the ‘Other’ category, on average, 9.0% more wage payments to SC workers were processed within the 7 day period and 9.3% for ST workers. Similarly, nearly 14.0% more wage payments for SC workers and 8.0% more wage payments for ST workers were processed within 15 days compared to ‘other’ workers. The numbers in Table 2 suggest that there is a statistically significant difference in the time to process payments across caste lines (p-values < 0.01). This is large-scale data-based evidence underscoring the ground reports on caste and communal tensions created due to the circular on payments segregated along caste lines.

Examining the regression results for payment type, we find that there is no statistically significant difference between the two payment types in terms of time taken to process payments even after controlling for the caste, quarter of transaction, state and volume of transactions (p-value is 0.881). This contradicts the argument

given by the MoRD, as discussed in Section 3, that it would lead to efficiency gains in terms of reducing the time taken to process payments. The findings remain unchanged when we use the alternative models discussed in Section 4.

5.2 Impact of ABPS on Rejections

Table 3 shows that there is only a marginal difference between the percentage of payments rejected across the two payment types. While 2.85% of account-based payments were rejected, the corresponding figures for APBS is 2.1%.

Results from Table 4 suggest that, controlling for the caste of the worker, quarter of transaction, state, and volume of transactions, there is no statistically significant difference (p-value is 0.626) in the percentage of rejected transactions between those with ABPS payments compared to the account-based payments. This provides further evidence that the introduction of ABPS has not necessarily led to a statistically significant reduction in rejections. The detailed results for percentage of transactions rejected as the outcome variable are presented in Table 7 in the Appendix.

6 Discussion

To understand the efficacy of any new technological intervention, instead of evaluating the state in its idealised form, it is critical to evaluate how the state is experienced by the intended rights and entitlement holders. The state's perspective on the two digital technologies in MGNREGA discussed in this paper can be likened as 'high modernist' interventions in the spirit of the seminal work of James Scott called 'Seeing Like A State' (Scott 1998). High modernists are likely to find standardised technological apparatus appealing as tools for governance, and tend to ignore more contextual practical/local knowledge or common wisdom. As a consequence, the state actors at various levels of the administrative hierarchy become cogs in such a technological platform because the controls are centralised. In the process, federalism gets flattened and violations of rights remain unaccounted for (Buddha et al. 2021). As a corollary, the state refers to rights-holders as 'beneficiaries', making the state seem to divest its responsibility to uphold citizens' rights and instead appear like a benefactor (Narayanan 2022).

Using large-scale data, our paper demonstrates how two high modernist digital technological interventions in MGNREGA—trifurcation of payments by caste and ABPS payments—have fallen short of the intended 'public values' of efficiency. In a rights-based law, efficiency has to be understood as a system that honours the rights-holders. In this sense, we define efficiency as the percentage of wage payments transferred to workers within the stipulated period by the union government. This definition of efficiency is in line with the tenets of the Act and with what the union government has stated..

As our paper demonstrates, the trifurcation of payments by caste can at best be considered a wild technocratic gambit with huge costs borne by millions of workers and no evident benefits. The delay compensation alone payable to MGNREGA

workers in our sample calculated as per the Act is ₹399 million. However, this compensation was neither acknowledged nor paid by the union government. Although the caste-based segregation of wage payments has been withdrawn, the union government has not assumed any accountability for damages caused by the move.

We also demonstrate how the government's claims on efficiency gains due to ABPS stand on shaky grounds. Reversing Scott's thesis, Chaudhary (2020) argues that the introduction of Aadhaar has created a "distant, opaque, and seamful" perception of the state for citizens. The author writes "Aadhaar makes a clear attempt to present the state as a homogenous, singular entity and as a result tries to minimise heterogeneous practices that build around different layers of the state." The author observes three broad patterns in how rural citizens see the state vis-a-vis social protection measures: (a) Seeing a distant state, (b) Seeing an opaque state, and (c) Seeing a 'seamful' state. Such a theoretical taxonomy anchors our empirical observations. It contextualises how the empirical analysis in this paper fits into the framework of MGNREGA workers having to see a distant and opaque state. Consider the case of wage payments being rejected. Rejections in wage payments occur in both ABPS and account-based payments, with no evident difference in rejection rates. Rejections arising in account-based payments can usually be rectified locally at the block computer office. However, local government and rural bank officials do not know how to rectify rejections arising in ABPS. For instance, when the software mapping between a bank branch's institutional identification number breaks with the National Payments Corporation of India (NPCI) mapper, ABPS payments get rejected. Officials largely are unclear on how to resolve this. For other challenges concerning opacity of the state due to Aadhaar in MGNREGA, see Dréze (2018), Teja (2023), Narayanan and Dhorajiwala (2019).

Following the paradigm of 'patching development' as put forth by Veeraraghavan (2022), both the technology initiatives discussed in this paper are (a) top-down, (b) focussed in small details and (c) iterative. They were both introduced without consultations with the constituent states or with workers. So they are top-down. Altering the centralised MIS to create three payment channels by caste as a drop-down menu for computer operators and to make ABPS as the only 'button' option on the computer are examples of focusing on small details. The constant tweaking on the MIS, on banking softwares and documentary requirements from workers, are all iterative in practice. The key aspect of the iterative step is information from workers is flowing upwards and not the other way around. With the complete absence of any legal safeguards for workers, the very design and the nature of implementation of such initiatives appear incongruous with claims of transparency, accountability and participatory democracy.

A key question that therefore emerges is who is responsible when technology fails the marginalised? (Dhorajiwala 2020). Digital technology is a tool for implementation of social policies and cannot be the sole engine. As different problems emerge, the implementers (governments) tend to find a technological solution to it as it is an easy approach to 'patch development.' Such changes may appear simple at the planning level, but introducing these changes on the ground takes time and can be costly. It is critical to note that technological choices have socio-economic consequences and it is unethical to impose techno-solutions without adequately

assessing and addressing its pros and cons. Evidence has indicated that interventions that are designed from the workers’ perspective, with their accessibility at the centre, have led to substantial reductions in payment delays (Das et al. 2023). Rights-holders come from diverse backgrounds, usually take time to adjust to the changes, and some population groups may face severe hardships or even get excluded; consequently, it is important to have a continuous consultative process, pilot any intended changes in different areas and population groups and assess the net benefits and costs. It would be disastrous to let rights be reduced to a technological theme park.

Appendix

See Tables 5, 6, 7.

Table 5 Regression analysis of wage transactions processed in 7 days and quarterly data

Variables	Estimate	Standard Error	<i>t</i> value	Pr(> t)
Intercept	57.219	5.167	11.073	0.0000***
Caste (SC = 1)	8.880	3.352	2.649	0.0086**
Caste (ST = 1)	9.376	3.205	2.926	0.0038**
Payment type (ABPS = 1)	-0.364	2.422	-0.150	0.8806
Quarter (q2 = 1)	8.621	3.365	2.562	0.0111*
Quarter (q3 = 1)	14.261	3.390	4.206	0.0000***
Quarter (q4 = 1)	1.567	3.355	0.467	0.6408
State name (Chhattisgarh = 1)	-16.148	5.610	-2.879	0.0044**
State name (Jharkhand = 1)	-37.506	5.281	-7.102	0.0000***
State name (Karnataka = 1)	-36.235	5.288	-6.852	0.0000***
State name (Kerala = 1)	-20.340	5.283	-3.850	0.0002***
State name (Madhya Pradesh = 1)	-17.608	6.058	-2.906	0.0040**
State name (Odisha = 1)	-19.975	5.304	-3.766	0.0002***
State name (Rajasthan = 1)	-28.399	5.415	-5.245	0.0000***
State name (Uttar Pradesh = 1)	-19.870	5.330	-3.728	0.0002***
State name (West Bengal = 1)	-41.670	5.290	-7.876	0.0000***
Number of transactions	-0.000	0.000	-1.863	0.0638

Signif. codes: 0 <= '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Residual standard error: 18.29 on 223 degrees of freedom

Multiple R-squared: 0.4006, Adjusted R-squared: 0.3576

F-statistic: 9.315 on 223 and 16 DF, *p*-value: 0.0000

Table 6 Regression analysis of wage transactions processed in 15 days and quarterly data

Variables	Estimate	Standard Error	t value	Pr(> t)
Intercept	86.218	5.741	15.017	0.0000***
Caste (SC=1)	14.184	3.724	3.809	0.0002***
Caste (ST=1)	8.827	3.561	2.479	0.0139*
Payment type (ABPS=1)	0.142	2.692	0.053	0.9579
Quarter (q2=1)	-4.157	3.739	-1.112	0.2674
Quarter (q3=1)	-7.536	3.767	-2.001	0.0466*
Quarter (q4=1)	-15.942	3.728	-4.277	0.0000***
State name (Chhattisgarh=1)	-18.913	6.233	-3.034	0.0027**
State name (Jharkhand=1)	-46.435	5.868	-7.913	0.0000***
State name (Karnataka=1)	-27.125	5.876	-4.616	0.0000***
State name (Kerala=1)	-17.778	5.870	-3.028	0.0027**
State name (Madhya Pradesh=1)	-19.059	6.732	-2.831	0.0051**
State name (Odisha=1)	-18.183	5.893	-3.086	0.0023**
State name (Rajasthan=1)	-16.626	6.017	-2.763	0.0062**
State name (Uttar Pradesh=1)	-15.506	5.923	-2.618	0.0094**
State name (West Bengal=1)	-42.969	5.878	-7.310	0.0000***
Number of transactions	-0.000	0.000	-1.292	0.1977

Note: Signif. codes: 0 < '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Residual standard error: 20.32 on 223 degrees of freedom

Multiple R-squared: 0.3912, Adjusted R-squared: 0.3475

F-statistic: 8.954 on 223 and 16 DF, p-value: 0.0000

Table 7 Regression analysis of wage transactions rejected

Variables	Estimate	Standard Error	t value	Pr(> t)
Intercept	0.634	1.335	0.475	0.6353
Payment type (ABPS = 1)	-0.408	0.626	-0.652	0.5153
Caste (SC = 1)	1.380	0.866	1.594	0.1123
Caste (ST = 1)	2.197	0.828	2.654	0.0085**
Quarter (q2 = 1)	-1.405	0.869	-1.616	0.1074
Quarter (q3 = 1)	-1.741	0.876	-1.988	0.0480*
Quarter (q4 = 1)	1.193	0.866	1.377	0.1698
State name (Chhattisgarh = 1)	3.449	1.449	2.381	0.0181*
State name (Jharkhand = 1)	7.144	1.364	5.238	0.0000***
State name (Karnataka = 1)	0.851	1.366	0.623	0.5336
State name (Kerala = 1)	3.665	1.364	2.686	0.0078**
State name (Madhya Pradesh = 1)	-0.259	1.565	-0.165	0.8687
State name (Odisha = 1)	0.987	1.370	0.720	0.4720
State name (Rajasthan = 1)	-0.736	1.398	-0.526	0.5991
State name (Uttar Pradesh = 1)	1.298	1.377	0.943	0.3469
State name (West Bengal = 1)	-0.295	1.366	-0.216	0.8293
Number of transactions	0.000	0.000	0.547	0.5847

Note: Signif. codes: 0 < '***' < 0.001 < '**' < 0.01 < '*' < 0.05

Residual standard error: 4.723 on 223 degrees of freedom

Multiple R-squared: 0.2655, Adjusted R-squared: 0.2128

F-statistic: 5.037 on 223 and 16 DF, p-value: 0.0000

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References

- Azim Premji University. 2022. *Employment Guarantee during Covid-19: Role of MGNREGA in the year after the 2020 lockdown*. Centre for Sustainable Employment, Azim Premji University and NREGA Consortium. https://cse.azimpremjiuniversity.edu.in/wp-content/uploads/2022/10/MGNREGA_Covid_Survey_Report_Final.pdf
- Bannister, F. 2014. ICT, public values and transformative government: A framework and programme for research. *Government Information Quarterly* 31 (1): 119–128. <https://doi.org/10.1016/j.giq.2013.06.002>.

- Bhaskar, A., Sarkar, A., and Singh, P. 2024. To Link or not to Link: How Aadhaar Impacts the Delivery of Welfare. *Economic and Political Weekly*, 59(1). <https://www.epw.in/journal/2024/1/special-articles/link-or-not-link.html>
- Buddha, C., S. Dhorajiwala, and R. Narayanan. 2021. Can a machine learn democracy? *AMCIS 2021 Proceedings*. 8. https://aisel.aisnet.org/amcis2021/social_inclusion/social_inclusion/8
- Buddha, C., and L. Tamang. 2023. From Aadhaar mandate to mass job card deletions: Unravelling the MGNREGA story. *Economic and Political Weekly*, 58(38), 13–16. <https://www.epw.in/journal/2023/38/commentary/aadhaar-mandate-mass-job-card-deletions.html>
- Chaudhuri, B., and L. Konig. 2018. The Aadhaar scheme: a cornerstone of a new citizenship regime in India? *Contemporary South Asia* (pp. 127–142). Routledge.
- Chaudhuri, B. 2020. Distant, opaque and seamful: Seeing the state through the workings of Aadhaar in India. *Information Technology for Development* 27 (1): 37–49. <https://doi.org/10.1080/02681102.2020.1789037>.
- Cordella, A., and C.M. Bonina. 2012. A public value perspective for ICT enabled public sector reforms: A theoretical reflection. *Government Information Quarterly* 29 (4): 512–520. <https://doi.org/10.1016/j.giq.2012.03.004>.
- Das, U., A. Paul, and M. Sharma. 2023. Reducing delay in payments in welfare programs: Experimental evidence from an information dissemination intervention. *World Bank Economic Review* 37 (3): 494–517. <https://doi.org/10.1596/41284>.
- Department of Expenditure. 2017. *Note on delay in payments of MGNREGA*. https://drive.google.com/file/d/1H-WZNyV-v8MO5ijSeyYxOq-gXvyk2xLR/view?usp=drive_link
- Dhorajiwala, S. 2020. Who is responsible when technology fails the marginalised? *Economic and Political Weekly Engage*, 55(21). <https://www.epw.in/engage/article/who-responsible-when-technology-fails-marginalised>
- Dréze, J. 2018. Done by Aadhaar. *The Telegraph*. 2018, August 3. <https://www.telegraphindia.com/opinion/done-by-aadhaar/cid/1467855>
- Express News Service. 2024. NREGS payments: Aadhaar-based system mandatory now, Govt says may consider exemptions on case basis. *The Indian Express*. 2024, January 2. <https://indianexpress.com/article/india/nregs-payments-aadhaar-based-system-mandatory-now-govt-says-may-consider-exemptions-on-case-basis-9091073/>
- Falcao, V.L. 2024. *Imagined entitlements and real lives: Technology, welfare rights, and citizenship in India* [Unpublished doctoral dissertation]. King's College London.
- Guida, J. and M. Crow, 2009. E-government and e-governance. *ICT4D: Information and Communication Technology for Development*, pp. 283–320.
- Hanbal, R.D., A. Prakash, and J. Srinivasan. 2023. Seeing data like a state: A case of Open Government Data in India's livelihoods program. *Information Polity* 28 (2): 259–275. <https://doi.org/10.3233/ip-220060>.
- Harrison, T.M., S. Guerrero, G.B. Burke, M. Cook, A. Cresswell, N. Helbig, J. Hrdinova, and T. Pardo. 2012. Open government and e-government: Democratic challenges from a public value perspective. *Information Polity* 17 (2): 83–97. <https://doi.org/10.3233/ip-2012-0269>.
- Heeks, R. 2022. Digital inequality beyond the digital divide: Conceptualising adverse digital incorporation in the global South. *Information Technology for Development* 28 (4): 688–704. <https://doi.org/10.1080/02681102.2022.2068492>.
- Jebaraj, P. 2021. Centre to scrap caste-based payments for MGNREGA. *The Hindu*. 2021, November 2. <https://www.thehindu.com/news/national/centre-to-scrap-mgnrega-caste-based-wage-payments/article65024866.ece>
- Jørgensen, T.B., and B. Bozeman. 2007. Public values. *Administration and Society* 39 (3): 354–381. <https://doi.org/10.1177/0095399707300703>.
- Kruks-Wisner, G. 2018. *Claiming the state: Active citizenship and social welfare in rural India*. Cambridge University Press.
- LibTech India 2021. *Heavy Wait : Wage payment delays in NREGA by the central government across caste and payment type from April, 2021 to September, 2021*. http://libtech.in/wp-content/uploads/2021/11/Heavy-Wait_LibTech_NREGAPaymentDetailsCastePaymentType_AprilSep2021_FINAL.pdf
- Masiero, S., and V. Arvidsson. 2021. Degenerative outcomes of digital identity platforms for development. *Information Systems Journal* 31 (6): 903–928. <https://doi.org/10.1111/isj.12351>.
- Ministry of Rural Development. 2017. <https://drive.google.com/file/d/1YS99y17AgWJOAN8dcUe4zZLUjY11awl/view?usp=sharing>

- Ministry of Rural Development. 2020. *Increase in employment under MGNREGA*. <https://www.pib.gov.in/PressReleaseDetail.aspx?PRID=1654683>
- Ministry of Rural Development. 2021. [https://drive.google.com/file/d/1AbqSnXNsTBhdzmNdHwn dVkmZjTtb7-19/view?usp=drive_link](https://drive.google.com/file/d/1AbqSnXNsTBhdzmNdHwndVkmZjTtb7-19/view?usp=drive_link)
- Ministry of Rural Development. 2023a. [https://drive.google.com/file/d/1YS99y17AgWJ0AN8dcUe 4zZLUnJyl1awl/view?usp=sharing](https://drive.google.com/file/d/1YS99y17AgWJ0AN8dcUe4zZLUnJyl1awl/view?usp=sharing)
- Ministry of Rural Development. 2023b. *Clarifications of Union Rural Development Ministry on budget cut to MGNREGA* (1896038). [https://rural.nic.in/en/press-release/clarifications-union-rural-devel opment-ministry-budget-cut-mgnrega](https://rural.nic.in/en/press-release/clarifications-union-rural-development-ministry-budget-cut-mgnrega)
- Moudgal, Sandeep. 2021. Karnataka: Caste-based wage disbursal at MGNREGA sites slammed. *Times of India*. 2021, August 23. <https://timesofindia.indiatimes.com/city/bengaluru/caste-based-wage-disbu rsal-at-mgnrega-sites-slammed/articleshow/85552593.cms>
- Nair, Sobhana. 2023. Job card-Aadhaar mismatch: A missing letter means no work for MGNREGS work- ers in Odisha. *The Hindu*. 2023, June 24. <https://www.thehindu.com/news/national/job-card-aadha ar-mismatch-a-missing-letter-means-no-work-for-mgnregs-workers-in-odisha/article67005710.ece>
- Narayanan, R., S. Dhorajiwala, and R. Golani. 2019. Analysis of payment delays and delay compensation in MGNREGA: Findings across ten states for financial year 2016–2017. *Indian Journal of Labour Economics* 62 (1): 113–133. <https://doi.org/10.1007/s41027-019-00164-x>.
- Narayanan, R., and S. Dhorajiwala. 2019. The namesake: Human costs of digital identities. *Economic and Political Weekly Engage*, 54(49). <https://www.epw.in/engage/article/namesake-human-costs-digital-identities>
- Narayanan, R. 2022. Adding digital layers of indignity. *The Hindu*. 2022, July 25. <https://www.thehindu. com/opinion/op-ed/adding-digital-layers-of-indignity/article65678585.ece>
- Nyst, C., P. Makin, S. Pannifer, and E. Whitley. 2016. *Digital identity: Issue analysis: executive summary*. Consult Hyperion, Guildford.
- PAEG. 2023. *What should the minimum budget for NREGA be for FY 23-24? Pre-Budget Statement by Peoples' Action for Employment Guarantee (PAEG)*. Accessed from: [https://drive.google.com/ file/d/1hDp5Um4eUpi4vsULNKgeIoFALdLfqn/view](https://drive.google.com/file/d/1hDp5Um4eUpi4vsULNKgeIoFALdLfqn/view)
- People's Action for Employment Guarantee, and NREGA Sangharsh Morcha. 2023. *NREGA post-budget brief, FY 2023–24*. https://drive.google.com/file/d/1dxC9s1yrJXpEsDIHpu89v7ADQD4iUEJ9/ view?usp=drive_link
- Sethi, N. 2016. Govt uses off-record WhatsApp, instructing states to cut back work for MNREGA. *Busi- ness Standard*. 2016, October 29. https://www.business-standard.com/article/economy-policy/govt- uses-off-record-whatsapp-instructing-states-to-cut-back-work-for-mnrega-116102400673_1.html
- Scott, J.C. 1998. *Seeing like a state: How certain schemes to improve the human condition have failed*. Yale University Press.
- Sood, Anusha. 2021. Modi govt to rethink caste-based payment of wages under MGNREGA, says aware of problems. *The Print*. 2021, October 8. <https://theprint.in/india/governance/modi-govt-to-rethink- caste-based-payment-of-wages-under-mgnrega-says-aware-of-problems/747506/>
- Teja, C. 2023. Aadhaar-based MGNREGA payment causing delays in wages, non-disbursal. *The News Minute*. 2023, June 4. <https://www.thenewsminute.com/article/aadhaar-based-mgnrega-payment- causing-delays-wages-non-disbursal-178064>
- The Supreme Court of India. 2018. *Swaraj Abhiyan vs Union Of India*. 2023, June 4. <https://indiankano on.org/doc/59849272/>
- Twizemimana, J.D., and A. Andersson. 2019. The public value of e-government—A literature review. *Government Information Quarterly* 36 (2): 167–178. <https://doi.org/10.1016/j.giq.2019.01.001>.
- Veeraraghavan, Rajesh. 2022. *Patching development: Information politics and social change in India*. Oxford University Press.
- Venkatanarayanan, Anand. 2017. Government's claims of Aadhaar savings for the MNREGA scheme are overstated. *Medianama*. 2017, June 29. <https://www.medianama.com/2017/06/223-aadha ar-nrega-uidai>
- Vivek, S., R. Narayanan, D. Chakraborty, R. Veeraraghavan, and V. Vardhan. 2018. Are technology-ena- bled cash transfers really 'direct'? *Economic & Political Weekly*, 53(30). <https://www.epw.in/journ al/2018/30/special-articles/are-technology-enabled-cash-transfers.html>
- World Bank. 2015. *State of safety nets 2015*. <https://www.worldbank.org/socialprotectionlabor/safetynets 2015>

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