



# PREFERENTIAL RESOURCE ALLOCATION?

## Mahatma Gandhi National Rural Employment Guarantee Scheme in Andhra Pradesh

MEGAN SHEAHAN, YANYAN LIU, CHRISTOPHER B. BARRETT, AND SUDHA NARAYANAN\*

India’s Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) employs about 50 million men and women every year and offers an important opportunity for investigating the link between public works spending and the political allocation of funds. First of all, MGNREGS is derived from the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), which grants citizens the “right to work” on local infrastructure projects at a set minimum wage. This is one of the few if not the only program in the world to nest a government workfare program within a legal entitlement. As such, MGNREGS is ostensibly designed to be a self-targeting and demand-driven program, where labor is aggregated and public works are selected at the local level before final approval at higher levels of government. Secondly, MGNREGS also put in place a suite of accountability and transparency mechanisms, including but not limited to publicly-available data and social audits. The extent to which these unique features of MGNREGS have eliminated avenues for taking advantage the program for political gain is a question worth exploring.

### CONTEXT

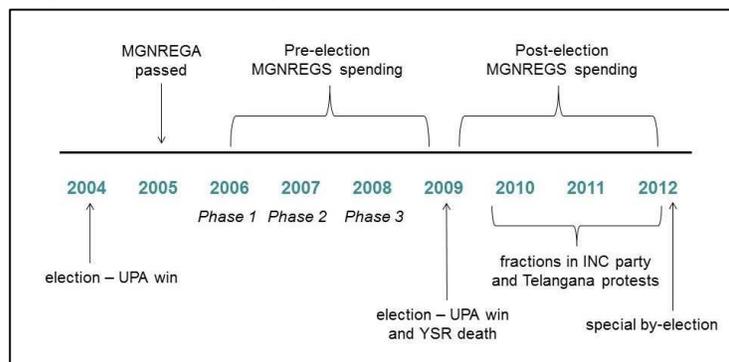
While MGNREGS is a national program implemented by individual states, the legislation from which it is derived, the MGNREGA, provides space for a bottom-up and local level approach to planning and selecting works. The vision is that decentralization of public work choice would ensure their contextual appropriateness, reflect the local needs and priorities of the people, and facilitate a demand-driven approach. In contrast, qualitative studies and assertions from the general public suggest that factors apart from the intended “demand-driven” targeting tactics determine where MGNREGS funds are directed. This is especially true in Andhra Pradesh (AP), where reports show that implementation has been flush with directives and orders from the state government,

often signifying a top-down approach. The question empirically unanswered to-date is whether or not this implementation style undermines the power intended for the villages and prospective workers.

### Politics in Andhra Pradesh

At the time MGNREGA was passed in 2004, the Indian National Congress (INC), the main party within the UPA coalition, had just wrested power from the regional party, Telugu Desam, in the AP’s Legislative Assembly election. Y.S. Rajashekara Reddy (YSR) took over as Chief Minister. In his years in power, YSR oversaw the implementation of a large number of social welfare measures, the new MGNREGS among them.

### Timeline of MGNREGS project implementation and political situation in Andhra Pradesh



The next election at the state and national level was held in April 2009, just at the start of the 2009/2010 fiscal year. In AP, YSR was re-elected with a large margin—ostensibly due to, among other things, the successful implementation of various social welfare programs. Soon after the elections, however, YSR was killed in a helicopter crash and a struggle for power within the state and party ensued. After deep conflicts with members of the ruling INC party, in 2011 YSR’s son, Jaganmohan Reddy, left to form his own party called the YSR Congress. In 2012, the YSR Congress won 16 of the 19 contested Legislative Assembly seats, with Reddy himself

\* Megan Sheahan is a Research Support Specialist at Cornell University. Yanyan Liu is a Research Fellow at the International Food Policy Research Institute. Christopher B. Barrett is a Professor at Cornell University. Sudha Narayanan is an Assistant Professor at the Indira Gandhi Institute of Development Research.

winning a National Parliament seat and his mother, Y.S. Vijayamma, winning the State Assembly seat vacated by his father's death.

## APPROACH

This paper investigates the correlates of MGNREGS spending at the *mandal* (sub-district) level in AP. We establish to what extent project spending at the mandal level suggests the presence of two major components of clientelism—vote buying and political patronage—versus the stated target of the program, allocation of resources to address human needs. The timely occurrence of a national and state-level election in 2009, several years into the implementation of MGNREGS, allows us the opportunity to test for the incidence of vote buying by the national and state-level incumbent coalition, the United Progressive Alliance (UPA), leading up to the election. Then, because we observe several years of MGNREGS implementation following the 2009 election where the incumbent party did win re-election, we also are able to test for the existence of patronage effects.

The data used in this analysis come from a range of publicly available sources, including community-audited MGNREGS administrative records downloaded from the scheme website, assembly constituency election data made available by the Election Commission of India, the Indian Population Census from 2001, the Indian Agricultural Census from 2005/06, and the Indian Village Amenities Census from 2001.

We expect both needs- and clientelistic-based motivations have been instrumental in guiding MGNREGS resource allocation and, ultimately, expenditures, in the program years spanning 2006/2007 to 2012/2013. In this study, “vote buying” and “patronage” form the set of clientelistic tendencies observed at different points along the political calendar, the former pre-2009 election and the latter post-2009 election. Our results are summarized below.

## FINDINGS

### Needs-Based Targeting

Strictly, MGNREGS is a “right to work” program, not an anti-poverty program, meaning the government does not necessarily target funds so much as approve, oversee, and possibly manipulate how funds are spent. However, self-targeting implies that expenditures should be concentrated in poorer areas and where infrastructure is less developed. While the government is not tasked with allocating funds based on specified criteria as in many other public programs, we refer to “needs-based targeting” using variables that describe the state of the mandal before MGNREGS began.

We found that mandals with a higher percentage of illiterate individuals received more funds across all program years under study, but areas with more scheduled caste and tribe households

received more funds only in the post-2009 years. Because we expect that lower caste and illiterate individuals are likely to require assistance through government programs like MGNREGS on account of their relative poverty and employment levels, these findings suggest that MGNREGS expenditures were targeted to the poorest and neediest areas both before and (even more so) after the 2009 election, after which time all districts were participating in the program.

We also found that areas with more agricultural credit opportunities (a proxy for the robustness of agricultural institutions) and mandals containing more villages with medical facilities and paved approach roads (general infrastructure variables) receive less funds per capita. On the other hand, mandals containing more remote villages receive more funding per capita. The direction and significance of these covariates are nearly identical in the years both before and after the 2009 election, suggesting spending has been well-matched to areas with more infrastructure needs across time.

On the other hand, mandals with a higher percentage of agricultural laborers received more funds in the pre-election period but a lower amount of funds in the post-election period. This implies that MGNREGS initially was well-targeted to areas with larger numbers of casual agricultural laborers, the portion of the population that may have a higher demand for outside employment options, but that this correlation eroded after the election.

Mandals with a higher percentage of unirrigated land received more funds, all else equal, meaning funds were targeted to areas that stood to gain from the type of infrastructure projects facilitated by MGNREGS. Areas with more farms characterized as small or marginal and areas with more inequality in land holding size received less MGNREGS spending. This shows that areas with mostly larger farms, equality across those farm sizes, and historically higher average rainfall received more funding, characteristics one can associate with areas of high agricultural activity and potential. To the extent that the durable assets created under MGNREGS improve agricultural productivity and incomes and thereby accelerate economic growth and poverty reduction, respectively, our results suggest that MGNREGS funds were distributed to areas with the potential for great impact across program years.

AP is an agriculturally important and drought vulnerable state, so variation in rainfall levels over time is expressly important to households deriving some part of their income from agricultural cultivation or labor. As such, we examined how well the MGNREGS accommodated the time-varying needs of the mandal, serving as a safety net against shocks and not just as a pro-poor transfer. In the pre-2009 election years, we observe that areas with less than average rainfall in both seasons (*kharif* and *rabi*) were more likely to receive more funds. In the post-2009 years, we observe that areas with below average *kharif* rainfall are less likely to receive funds. In

the *rabi* season, areas with rainfall levels further below normal receive less funds than those with levels just below average. These post-2009 results are doubly unfortunate since areas with a higher percentage of agricultural laborers received less MGNREGS, meaning those households that rely more on causal agricultural labor opportunities may have had more difficulty earning income in these post-election years, particularly during the main *rabi* season.

### No Evidence of Vote Buying (pre-2009)

Since MGNREGS started in 2006/2007, several fiscal years before the 2009 election, we expect the state-level incumbent political coalition to have used MGNREGS funds in 2006/2007, 2007/2008, and 2008/2009 as a means of convincing constituents to vote for them in the 2009 election. We define “vote buying” broadly as distributing funds in an attempt to influence the outcome of an upcoming election in the favor of an incumbent. This effect does not necessarily imply bribing or coercive actions taken on the part of politicians.

In these pre-2009 years, we find no direct relationship between MGNREGS expenditures and voting patterns, implying that UPA did not manipulate the new program by funneling program resources with the express purpose of winning re-election. Even in the fiscal year directly before the 2009 election (2008/2009), which could have been characterized by more vote buying than the earlier fiscal years, separate cross sections by fiscal year still reveal no vote buying effects. Even further testing to determine whether the INC party instead of the full UPA coalition used MGNREGS funds for vote buying purposes still exposed no vote buying effects.

Taken together, the weight of evidence across all model specifications refutes any claim that our research findings lend credence to accusations of overt vote buying by the UPA coalition leading up to the 2009 election.

### Some Evidence of Patronage (post-2009)

“Patronage” for the purposes of this study, is defined as political leaders’ allocation of scarce public funds towards their supporters following a favorable election outcome. Because the UPA coalition won reelection at the state and national level in 2009, we then investigate the extent to which patronage effects affected MGNREGS spending levels in the fiscal years after 2009, specifically 2010/2011, 2011/2012, and 2012/2013.

During that period, we find evidence that level of support for the UPA coalition is related to MGNREGS expenditures in the years after the election. This result holds across the full time period and when disaggregated by fiscal year, meaning the effects cannot be attributed to any one of the three post-election years in particular. The results also hold when looking more specifically at INC party support and when dropping the Telangana districts. Given we ob-

serve an average MGNREGS allocation per capita of about 540 rupees in any given fiscal year, this means that a 1 percentage point increase in UPA advantage is correlated with a less than 1 percent increase in the total MGNREGS funds allocated to a given mandal in the post-election years, a magnitude that is only sizable when considering relatively high levels of UPA advantage or mandals where per capita expenditure levels are much larger than average. As such, even though patronage effects are uncovered, their magnitude is quite small.

Evidence of patronage in the post-2009 election years may be best understood within the changing political climate immediately after the 2009 election. Recall that YSR, the figurehead of MGNREGS in AP, was killed not long after his re-election and that a struggle for power in the following years ensued. Evidence of patronage during this time may suggest that this disorder prompted politicians to use MGNREGS funds to secure their place in the AP political hierarchy moving forward, grounded in how their constituents voted in the most recent election. With a by-election for a limited number of seats in 2012 and another full election in 2014, we cannot necessarily disentangle the vote buying and patronage effects in the post-2009 era. What we can conclude is that clientelism emerged in the post-2009 period, representing a small shift from the pre-2009 YSR era when MGNREGS fund allocation was a function of targeting the needs of constituents rather than obvious vote buying.

### Main Determinants of Expenditure Levels

To understand which groups of variables—needs or clientelism based—were most strongly correlated with the distribution of program funds, we calculated Shapley values using the regression estimates, which describe the mean marginal contribution of each group of variables to the overall model R-squared. The estimates for all years, pre-2009, and post-2009 model specifications are presented below.

Across all included fiscal years, we find that the clientelism variables can explain only about one percent of the variation in MGNREGS spending levels. By contrast, the four categories of variables that together encapsulate the needs of the mandal explain more than 42 percent of the variation. In the post-election period, where our results suggest that clientelism had a much stronger relationship with MGNREGS fund allocation than in the pre-election years, we still find that the needs of the mandal far dominate the variation explained by the election variables. Indeed, even as the importance of the clientelism variables climbs to only 2.5 percent, the needs variables become even better predictors when all districts and phases are eligible for MGNREGS, explaining more than 63 percent of variation in expenditure patterns.

This decomposition exercise also uncovers that the statically-observed needs-based variables (related to labor land, and infrastructure) are jointly better predictors of MGNREGS funding levels than yearly rainfall-variability variables, suggesting that the MGNREGS expenditures have not responded very flexibly to changing labor market dynamics over time, although they do flow to poorer areas more generally.

### Decomposition of R-squared for MGNREGS fund expenditure models

	All years	Pre-2009	Post-2009
<b>Clientelism</b>	<b>1.0</b>	<b>0.1</b>	<b>2.5</b>
Needs-based: labor	14.2	9.9	22.9
Needs-based: land	11.3	11.6	16.7
Needs-based: infrastructure	14.2	12.0	20.2
Needs-based: rainfall	2.5	2.9	3.9
Election controls	2.2	2.3	3.1
District and year dummies	54.6	61.2	30.7
R-squared	0.5065	0.4936	0.5077
Observations	5,753	2,570	3,183

Notes: The included numbers represent Shapley values, or the percentage of the R-squared that can be explained by a particular group of regressors. The first column of this table includes all fiscal years between 2006/2007 and 2012/2013 except 2009/2010 (the election year).

### Political Reward for MGNREGS Spending

Because the UPA won re-election in 2009, there is good reason to believe that MGNREGS fund allocation played some role in their victory. A separate model to estimate if and how pre-2009 MGNREGS spending influenced 2009 voting outcomes relative to 2004 election outcomes addresses this question. When specifying this model with respect to the UPA coalition, we find that aggregate MGNREGS spending in the pre-election years is positive and statistically significantly correlated with the movement of voters towards UPA candidates. When re-specifying with respect to the local level incumbent party from the 2004 elections, however, we find no significant relationship between aggregate MGNREGS spending in the pre-election years and voter response. These results have two major implications:

- The fact that UPA candidates were “rewarded” for MGNREGS expenditures but local level incumbent parties were not implies that voters attribute MGNREGS to the UPA coalition even

when a different party is in power at the local level. This evidence supports the claim that MGNREGS is seen as a UPA “flagship” program.

- Because we find no evidence of blatant vote buying in the years leading up to the election, voters are not responding to clientelism but instead the well-targeted nature of the program. Indeed, overt vote buying was unnecessary for the UPA coalition to secure their 2009 victory; catering to the needs of their constituents by allocating scarce resources where they were most essential was a winning strategy for UPA.

### CONCLUSIONS

An empirical examination of the correlation between assembly constituency election outcomes and MGNREGS expenditure levels at the mandal level does not reveal evidence of vote buying before the 2009 election in AP, but does present consistent evidence (although with an effect small in magnitude) that the distribution of funds after the election was partially politically motivated, either as a patronage effect following the 2009 election or as a vote buying effect leading up to the by-election in 2012 or full election in 2014. We suspect that the emergence of clientelistic effects may have resulted, to some extent, from the power vacuum and struggle that occurred in AP following the sudden death of the re-elected Chief Minister from the UPA coalition. Alongside these findings, we also observe that expenditures were well-aligned with the needs of the mandal, especially characteristics of the population, land, and infrastructure before the start of the program as well as the changing labor market dynamics across years and agricultural seasons. Even in the post-election period where clientelism is uncovered, we still find that the needs of the mandals explain far more of the variation in MGNREGS expenditures than all of the political variables combined, meaning any infusion of politics was necessarily dwarfed by needs-based expenditures. The fact that clientelism does not have a major influence on spending levels means that the self-targeting, transparency, and accountability mechanisms—including widespread information disclosure and social audits—integrated into the MGNREGS appear to be working and reducing the potential for larger-scale clientelism to take hold in AP.

#### INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

A member of the CGIAR Consortium | A world free of hunger and malnutrition

2033 K Street, NW | Washington, DC 20006-1002 USA

T: +1.202.862.5600 | F: +1.202.467.4439

Email: ifpri@cgiar.org | www.ifpri.org

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