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A multi-dimensional analysis of the impacts of the Mahatma Gandhi National Rural Employment Guarantee Scheme: A tale from Tamil Nadu

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This paper provides a multi-dimensional analysis of the impacts of the Indian Mahatma Gandhi National Rural Employment Guarantee Scheme using a case study from rural Tamil Nadu. Drawing on structured interviews in households and semi-structured interviews with local employers and officials, we analyse the effects of the workfare scheme when it is widely and properly implemented. We distinguish between different conceptualizations of the work scheme as a means of welfare provision, labour market policy and intervention directed towards other objectives. We found that the goals of the scheme were fulfilled unevenly in the given context. Among other findings, we show that positive effects on the welfare of participating and non-participating households were accompanied by adverse effects on the local economy and negligible impact on out-migration for work.

Keywords: employment guarantee, India, poverty, rural development, rural labour markets, workfare

Introduction

Sustained macroeconomic progress of many developing countries has been for some time accompanied by strong calls for inclusive growth. Indeed, many of the countries in tropical areas have taken the project of their welfare state building more seriously. This has been especially, although not exclusively, observed in many Asian countries, where the expansion of attempts to deliver basic social safety nets has even been labelled as the 'next Asian revolution' (*The Economist*, 2012). An important part of the social protection strategies have been various cash-based distribution programmes (Barrientos & Hulme, 2009; Slater, 2011). The cash transfer interventions can be universal, targeted or self-targeted. They can be unconditional or conditional, that is joined with an access to basic services or productive employment in order to enable human capital and public assets development. The core idea behind the cash transfers is to delegate some responsibility to beneficiaries, while assuming that beneficiaries have better knowledge about their own investments in productive activities. Although the cash transfer interventions have often been acclaimed for their welfare effects and potential to promote development for the poor, there are also more critical voices which question their sustainability, suggest a limited redistributive power and view them as the means of reinforcing control of elites over marginalized groups (e.g. Ballard, 2013).

This article analyses the effects of Indian Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) which represents a specific type of self-targeted approach of cash transfers conditional on completing public works. It has emerged as

one of the biggest social interventions in the world, launched with promises to bring profound social change to rural India through enhancement of livelihood opportunities and household income (Government of India, 2005). However, MGNREGS goes beyond traditional cash transfer interventions by recognizing the 'right to work' as a law. As such, it has been considered as a paradigm shift from basic needs to rights, that is towards granting legally socio-economic rights (in addition to political and civil rights) and enabling people (and giving them responsibility) to mobilize and access these rights (Joshi, 2010; Chopra, 2013).

Drawing primarily on our own micro-level evidence from Tamil Nadu, this article makes two contributions to existing literature on MGNREGS. First, it provides a multi-dimensional analysis focusing on various socio-economic impacts of MGNREGS and their interactions in a given regional context. To our best knowledge, surprisingly little empirical work of this kind exists in the literature. Second, our case study focuses specifically on the multiple effects of MGNREGS when it is widely and properly implemented. The implementation aspects of the MGNREGS are commonly discussed in literature as determining both the outputs and impacts of the scheme (e.g. Chakraborty, 2007; Khera, 2008; Johnson *et al*., 2009; Reddy *et al*., 2010). Here we wished to control these variables by selecting a region which is known as a best-practice case with respect to the MGNREGS implementation. Sivaganga district in Tamil Nadu was chosen as it is a socio-economically backward area appropriate for such public intervention and it was officially recognized as one of the districts with the best MGNREGS implementation recently prior to our survey (Government of India, 2009). In addition to the analysis in this main focus region, we also consider some quasi-counterfactual comparative evidence from socio-economically and culturally similar area in Thanjavur district, where the local population was largely unaffected by the scheme.

Background and research questions

The primary goal of MGNREGS is to enhance livelihood security in rural India by providing guaranteed employment (Government of India, 2005). Legally enacted by the Indian National Rural Employment Guarantee Act in 2005 and launched in 2006, MGNREGS guarantees 100 days of public employment per year to adult members of any rural Indian household willing to perform unskilled manual work at the statutory minimum wage. A key self-targeting mechanism is based on the assumption that only those lacking other opportunities should be attracted to this kind of relatively low-wage manual work. A direct pro-poor focus determined by the self-targeting principle (Besley & Coate, 1992; Imai, 2007) and the massive scale of MGNREGS signify its immense social and anti-poverty potential. Administrative records show that almost 55 million households (approximately 40 per cent of rural Indian households) were provided with an average of 50 days of employment in the financial year 2010–11. The annual income from MGNREGS was on average INR 4670 (USD 103 in 2011) per participating household, which is roughly the equivalent of 12 per cent of the average household expenditure among the poorer half of Indian households (National Sample Survey Office, 2011).

In addition to the primary goal, there are also a number of secondary objectives. MGNREGS is simultaneously discussed as an instrument for welfare provision (provision of workfare), redistribution (including second-round redistribution effects through pressures on private employment and wages), labour market policy and for tackling other problems such as gender imbalances, involuntary migration and low agricultural

productivity among other issues. Another essential feature of MGNREGS is its rights-based nature, though we do not explore this dimension in the present paper. A concise outline of diverse potential effects and assumptions behind MGNREGS is provided in Table 1 which illustrates the multi-dimensionality of the scheme, arguably related to its complex and still insufficiently understood mechanics (Basu *et al.*, 2009).

Although space limitations do not allow a detailed discussion of particular issues and theoretical causal mechanisms, the outline in Table 1 helps us to determine some broader research questions: 1) What segments of local population use the scheme and what are the determinants of participation? 2) What are the direct and indirect effects on the socio-economic situation of both participating and non-participating households? 3) What are the impacts on labour market and local employers? 4) What are the subjective views on the scheme by various segments of local population? 5) What possible behavioural effects can be expected when focusing on the perceptions of main problems and priorities by local population? 6) What are the impacts on out-migration for work?

As geographers interested in how the public intervention in question can shape local and regional development, we consider our focus on the interplay between different effects of MGNREGS as an important and to date relatively scarce type of empirical work. We regard it as a necessary supplement to existing studies concerned predominantly with a single or a few domains of MGNREGS impacts (Narayanan, 2008; Khera & Nayak, 2009; Pankaj & Tankha, 2010; Liu & Deininger, 2010; Azam, 2011; Imbert & Papp, 2012). In addition, as a micro-data case study, our findings provide alternative evidence to the work concerned with the 'average' relationships obtained from the analysis of more aggregate district-level or state-level data (e.g. Gaiha *et al.*, 2010; Azam, 2011; Berg *et al.*, 2012; Dutta *et al.*, 2012; Imbert & Papp, 2012).

Data and methods

The main survey among 735 households in 26 villages of Sivaganga district was conducted during July and August 2011, while fieldwork among 529 households in 16 villages of Thanjavur district took place between July and August 2010. Although identical in methodology, the survey instrument for structured interviews in the main focus area (Sivaganga district) was more extensive than that applied in Thanjavur district. In the surveyed area of Sivaganga district we additionally conducted 125 semi-structured interviews with local employers (mainly farmers) and other respondents knowledgeable of MGNREGS and the situation in the local labour market (mainly local officers). Below we distinguish between 'Type 1' respondents when referring to our household surveys and 'Type 2' respondents when referring to evidence from the semi-structured interviews.

The Sivaganga district, recognized officially as among the most backward parts of India, was particularly suited to our purposes. It is considered an industrially undeveloped area with a low level of human development and a large portion of local households living in material poverty, and it is a drought-prone area. Shortly before our survey the district was praised as one of the best performing in terms of MGNREGS implementation (Government of India, 2009). At least according to the information we could infer from various secondary data (Ministry of Rural Development, 2002; Census of India, 2011; Government of Tamil Nadu, 2011; unpublished material obtained directly from the districts collectors' offices), the area in Thanjavur district purposely selected for our survey has generally been found to have similar socio-economic and

Table 1. Diverse effects associated with MGNREGS.

Effects	Mechanisms	Core assumptions	Challenges
Employment creation; poverty reduction; creation of basic social safety net	Legal right to work; income addition through wage employment	Only those in need will go for public works employment; large excess of demand for work	Wage determination; assurance of wide access and awareness; targeting
Empowerment and improvement of workers' conditions	Monopsony of employers will be destroyed; demand for labour and wages in private sector will increase	Uncompetitive labour market with limited segmentation	Wage determination; segmentation of labour market; supply of works; public accessibility of detailed information
Reduction of distress-led migration for work	Availability of public works keeps people at home	Workfare is alternative to migration	Wage level; irregularity and maximum limit of work days
Increase in employment and empowerment of women	Equal wages; supporting infrastructure	Employment and earnings will strengthen independence of women	Women's access to public works; cultural norms
Creation and management of public assets	Works used for management of public assets	Works are not useless; standardized types of works	Planning and quality of works; public assets may be taken over by the rich
Improvement of human and social capital	Legal entitlements to 'right to work' increase capacity of the poor to articulate needs	Social mobilization will be catalysed and work productivity enhanced	Awareness of rules; social audits; problematic skill-addition; adverse effects due to identity politics and social tensions
Strengthening of local governments	Decentralization and participatory planning of works	Local administration has best knowledge about local needs	Capacity to plan and implement works; coordination among different governmental levels; corruption and identity politics
Welfare gains because of increase in earnings of rural workers in private sector	Upward pressures on wages in private sector	Change in nominal wage rates result in growth in real wages	Inflation; adverse impacts on employers – may hurt smaller farmers more
Multiplier effects on rural economy	Rural consumption catalysed by money channelled through MGNREGS	Effects on purchasing power exceed those of foregone income and rising consumer prices	May be wiped off by adverse effects on employers (increase in costs, unavailability of labour)
Crowding out private sector work and inducing shortage of agricultural labour	Drops in private sector employment because of public works	Substitution of public works and private sector employment	Wage determination; concentration of works to lean agricultural season
Spoiling labour	Adverse behavioural effects on workers create problems on the supply side of the labour market	Public works as easy money without real work; opportunity costs of foregone income	Works efficiency; targeting and extent of implementation

Sources: Imai (2007); Mehrotra (2008); Kochar (2008); Pankaj (2008); Basu *et al.* (2009); Khera & Nayak (2009); Scandizzo *et al.* (2009); Joshi (2010); Liu & Deininger (2010); Pankaj & Tankha (2010); Reddy *et al.* (2010); Dasgupta & Sudarshan (2011); De Neve & Carswell (2011); Price (2011); Shankar *et al.* (2011); Berg *et al.* (2012); Dutta *et al.* (2012); Ghose (2012); Imbert & Papp (2012); Jha *et al.* (2012); Pani & Iyer (2012).

agro-climatic conditions to that of Sivaganga district. An important difference was that MGNREGS had only just been launched in a few of the villages in Thanjavur district at the time of our survey.

The samples of individual villages and habitations were determined based on the secondary materials mentioned above, plus detailed data on the size of rural habitations covered under the National Rural Drinking Water Programme. Our goal was to select similar regions and locally representative samples of villages in terms of parameters such as population size, village accessibility and population composition. For this purpose, individual villages were selected randomly from larger groups of villages determined on the basis of the parameters noted above. For the selection of households within villages we used a random walk technique, having approximately predefined the number of interviews to be collected in each village. In this way, we sought to cover the socio-economic diversity associated with the spatial organization of a village. The interviews in households were carried out alternatively with adult males and females during weekday evenings and weekends, when most working adults tend to be at home. The main reference unit for most of the questions in our survey was household, defined on the basis of the same dwelling (the terms household and family are used interchangeably here). In addition to more usual components such as personal characteristics of respondents and their households and to questions directly related to the participation in MGNREGS and its assessments, the interviews focused also on respondents identifying and prioritizing problems and perceived priorities with assistance, and we also attempted to identify retrospectively some major shifts in households' circumstances and the main reasons for these changes.

The 125 semi-structured interviews with Type 2 respondents were additionally conducted in the surveyed villages of Sivaganga district. The majority (80 per cent) of these informants were farmers (of varying scales) who employ agricultural workers. The rest consisted of members of local administration (mainly panchayat presidents), other employers and a few other informants knowledgeable about the local situation. In each panchayat village we started our survey by interviewing the panchayat president (or another officer if the president was not available) who also informed us about potential Type 2 respondents for our survey. The semi-structured interviews focused specifically on MGNREGS effects on respondents' businesses, the local labour market, community assets, etc.

All field research were conducted in the Tamil language by a small team of male and female interviewers, comprising students and recent graduates from two local universities, mostly with previous experience with similar field research and specially trained to conduct our interviews. Table 2 presents some basic descriptive statistics revealed by our surveys. These results have uncovered some important differences between the Sivaganga and Thanjavur samples not captured in secondary data analysed prior to our survey and such variables would be controlled in our subsequent analysis throughout this paper.

Comparison of administrative data

Table 3 compares official administrative data on MGNREGS for the studied districts and villages with the figures for Tamil Nadu and the whole of India. The second column documents the large amount of public works generated under the scheme in Tamil Nadu and especially in Sivaganga district and the surveyed villages in this district. The number of work days per rural inhabitant was several times lower for both India as a whole and for Thanjavur district. Not only does this suggest the uneven extent of MGNREGS

Table 2. Basic descriptive statistics (Type 1 respondents and some village level characteristics).

	Sivaganga sample	Thanjavur sample
Number of surveyed households	735	529
Percentage of households participating in MGNREGS	82%	51%
Average number of work days per financial year	67	n.a.
(E) illiterate	38%	41%
(E) elementary or middle	34%	27%
(E) higher than middle	28%	32%
(O) farming	28%	36%
(O) casual work	57%	49%
(O) other (mainly regular employment outside agriculture)	15%	15%
Households in debt	67%	41%
(L) no land	44%	58%
(L) up to 0.5 acre of irrigated or up to 1.0 acre of non-irrigated	29%	15%
(L) 0.6–1.0 acre of irrigated or 1.1–2.0 acres of non-irrigated	4%	12%
(L) 1.1–2.5 acres of irrigated or 2.1–5.0 acre of non-irrigated	18%	12%
(L) more than 2.5 acres of irrigated or 5.0 acre of non-irrigated	5%	3%
Experience with long-term migration for work (% of households)	33%	10%
Self-reported poverty (% of households)	32%	66%
Household size (average)	4.63	4.80
Number of adults (average)	3.39	3.23
Number of children (average)	1.24	1.77
Private toilet at home	33%	9%
Average age of interviewees	42	38
Average distance to main road	2.9 km	3.8 km
Average (median) population size	2403 (1783)	1960 (1500)
Share of villages with an industrial unit	34%	31%
Share of villages with rice as single dominant cash crop	46%	39%

(E) – education of adult members; (O) – principal source of income; (L) – ownership of agricultural land.

Table 3. Comparison of administrative MGNREGS statistics (financial year 2010–11).

	Work days generated divided by rural population*	Share of women in total work days generated (%)	Average number of work days per participating household	Average daily wage (INR)	Average participating household income from MGNREGS (INR)
India	3.09	47.73	46.79	99.89	4674
Tamil Nadu	7.22	82.59	54.05	80.57	4355
Sivaganga district	10.09	83.40	51.30	90.27	4630
Villages in our sample (Sivaganga)	8.98	84.48	53.05	86.20	4573
Thanjavur district**	2.09	69.87	22.53	81.54	1713
Villages in our sample (Thanjavur)**	2.71	66.24	18.79	80.88	1520

*Provisional population figures from Census 2011 used in denominator. Village-level population was estimated by applying 2001 population shares of surveyed villages and district-level 2001–11 rural population growth rates. **These figures are from financial year 2009–10, the period in which our fieldwork was conducted, to allow for comparison between official figures and data from our field survey. *Sources*: The Mahatma Gandhi National Rural Employment Guarantee Act 2005, Ministry of Rural Development (http://nrega.nic.in); Indian Census, Government of India (http://censusindia.gov.in).

implementation but it also implicitly indicates differences in the excess demand for MGNREGS employment.

A notable feature that distinguishes Tamil Nadu from most other Indian states is the exceptionally high participation of women employed under MGNREGS. Equal wages for men and women and various other provisions incorporated in MGNREGS should enhance women's independent access to work opportunities and income. At the same time, however, the high female participation arguably indicates low demand for this type of work among male workers and thus also a relatively small excess of demand for MGNREGS employment in Tamil Nadu (Dutta *et al.*, 2012). The comparatively lower percentage of participating women recorded in Thanjavur district (with a similar socio-cultural environment to Sivaganga district) actually suggests a negative relationship between the proportion of women in MGNREGS and general excess of demand for MGNREGS employment.

A similar relationship, again a negative one, also seems to hold between women's participation and the gender wage gap of casual labourers (Dasgupta & Sudarshan, 2011). A look at the wage statistics (National Sample Survey Office, 2011b) indicates that Tamil Nadu and Kerala, as the two states with the highest female employment in MGNREGS, also have the highest gender wage gaps (for Tamil Nadu the disparity between male and female daily wages for casual labourers corresponded to INR 132/73 or USD 2.9/1.6), with the average male wage much higher than the MGNREGS wage.

The fourth column of Table 3 shows that on average only around half of the 100-working-day limit was attained and this figure is even significantly lower for Thanjavur district. There may be various reasons for such a large underutilized working day limit, though not much can be inferred from the official MGNREGS data. This is a case of a labour surplus economy, where the labour supply exceeds MGNREGS employment (Mukherjee & Sinha, 2011). An insufficient supply of work or implementation difficulties such as low level of funds, poor flow of funds due to political and administrative hurdles, and corruption at the worksites can thus be important factors especially in regions where the excess of demand for work is high.

Although the public availability of detailed official administrative data is proclaimed as an important aspect of MGNREGS accountability, the accuracy of official data may be questioned. We are pleased to say that for the area covered by our main survey in Sivaganga district at least, we have found generally good correspondence between official statistics and what our respondents reported. More specifically, the average daily wage reported by our respondents of INR 90 (USD 2) – with a standard deviation (SD) of INR 13.8 – is almost identical to that in official statistics (as presented in Table 3). The reported average number of work days per interviewed household was even higher than in the official data (67 with a notable SD of 23) and the proportion of women in the total work days (83 per cent) was close to the figure in official statistics. We believe these findings support the reliability of both our survey and official statistics.

Targeting and determinants of participation

In the Sivaganga sample, 82 per cent of the interviewed households reported some participation in the scheme, which was underway in all of the panchayat villages we visited. The group of non-participants consisted almost entirely of people who were not interested in unskilled manual labour or did not have the time or capacity to participate. The participation rate was 51 per cent among Thanjavur respondents but the public works employment was available only in some villages in Thanjavur district and the

Table 4. Predictors of participation in MGNREGS: binary logistic regression.

	Sivaganga		Thanjavur	
	B	(Std. error)	B	(Std. error)
(E) illiterate	0.872	(0.281)***	0.523	(0.241)**
(E) elementary or middle	0.976	(0.278)***	0.344	(0.253)
(E) higher than middle	Dummy		Dummy	
(O) farming	0.693	(0.332)**	0.158	(0.323)
(O) casual work	1.606	(0.297)***	0.700	(0.313)**
(O) other	Dummy		Dummy	
(L) no land	−0.261	(0.334)	−0.021	(0.312)
(L) up to 1 acre of irrigated or 2 acres of non-irrigated	0.062	(0.294)	0.347	(0.321)
(L) more than 1 acre irrigated or 2 acres non-irrigated	Dummy		Dummy	
Indebtedness	0.555	(0.227)**	0.365	(0.194)*
Private toilet	−1.154	(0.243)***	0.054	(0.373)
Migration experience	0.063	(0.242)	0.237	(0.356)
Self-reported poverty	−0.094	(0.268)	0.453	(0.229)**
Industrial unit in village	0.229	(0.240)	0.110	(0.211)
Nagelkere R^2	0.287		0.091	

Significant at *10%; **5%; ***1%. (E) – education of adult members; (O) – main source of income; (L) – ownership of agricultural land. When we analysed these two samples together, the district dummy always appeared significant.

average rate of participation was very low. The main reasons for non-participation were unavailability and low awareness of the scheme (one-fifth of Thanjavur respondents were not even aware of the scheme).

Closer inspection of differences between participating and non-participating households can reveal information about predictors of participation and targeting of the scheme. We employed a logistic regression with participation as the binary dependent variable and various characteristics of respondents as independent predictors. From a larger number of model specifications examined, Table 4 shows the most informative findings. In both of the samples, three statistically significant predictors of participation have been identified: illiteracy of adult members, casual labour as the main economic activity and household indebtedness. Some other characteristics such as the quality of housing, self-reported income, self-reported poverty, land ownership and size of household were also examined but they appeared insignificant, with negligible effects on the explanative power of the models shown in Table 4. The power of the model for the Thanjavur case is weak and its other specifications did not work any better. This suggests problematic targeting of the scheme in this region, which is not surprising because the public works were unavailable in several of the surveyed villages. The results are thus more interesting for the Sivaganga sample, where some additional variables – elementary or secondary education, farming as the main source of livelihood, and absence of private toilet (as a proxy for material wealth) – also become statistically significant predictors of participation.

Although the correlations identified for our main Sivaganga sample might suggest that some self-targeting mechanisms – a key assumption of the MGNREGS efficacy – are in place, a note of caution is necessary. Despite the statistical differences in the relative composition of beneficiary and non-participating households, we noticed during our fieldwork that the scheme is still used by many relatively well-off families that were apparently hardly in urgent material need. One explanation may be that members of

such economically more secure families opt for the scheme only occasionally and are rarely among those utilizing the full quota of 100 days. We thus ran an additional binary logistic regression focusing on the specifics of households that availed of the 100 days in our Sivaganga sample. Only education (negatively) and dependence on casual labour (positively) were found to be statistically significant predictors for full utilization of the 100-day limit.These findings suggest that some signs of self-targeting are working behind MGNREGS. However, it is again clear that ubiquitous coverage in Sivaganga district and low unmet demand for public works make targeting to the poorest questionable.

As noted, a distinguishing feature of participation in MGNREGS in Tamil Nadu as a whole and in the areas of our survey in Tamil Nadu is the high participation of women. Our results mirror the official data: 79 per cent of interviewed households in our main Sivaganga sample reported that only female members have been involved in MGNREGS. The single most prevalent answer to the question of low male participation was that they have other work (often abroad), with frequent direct or indirect references to existing gender wage disparities. In addition, we also found that the households with at least one male MGNREGS participant generally had lower self-reported income, more senior adult members, usually illiterate, and fewer children. The statistically significant effects of these characteristics were again confirmed using a binary logistic regression (complete tables of results are available from the authors upon request). If the scheme is primarily to provide a basic social safety net for the most vulnerable, the subgroup of households with at least one male participant seems to represent a priority group, which is indeed self-targeted to MGNREGS due to the absence of other opportunities.

Income from MGNREGS and effects on wages

In our survey in Sivaganga district we found the average annual earnings from MGNREGS to be INR 6030 (USD 133.3) per participating household. This is approximately 130 per cent of what can be calculated from the administrative statistics displayed in Table 3. The difference has been determined by the higher number of work days reported by our respondents in comparison with administrative data. The respondents themselves estimated that earnings from MGNREGS accounted on average for 36 per cent of their total family annual monetary income (SD = 19 per cent). This figure is likely an overestimation of the actual share, as suggested by some inconsistencies between answers to different questions related to reported income. Realistically, the actual average share of MGNREGS earnings is probably somewhere between our finding and the upper margin of the range reported in other literature (i.e. between 20–36 per cent), though evidence in this respect is only fragmentary (Pankaj, 2008; Ghose, 2012). In any case, these findings and figures displayed in the last column of Table 3 based on administrative data clearly show that MGNREGS works as a notable instrument to channel income to participating households.

In addition to the direct money flow through MGNREGS wages, second round effects are felt by both the beneficiaries and the non-participating population through impacts on private sector wage rates and inflation of food prices in particular. However, very little is known in these respects as it is difficult to isolate the effects of MGNREGS from other factors, such as rising fuel costs, which drive increases in food prices globally, or general growth in rural wages and consumption. Nevertheless, it is clear that the money flows injected through MGNREGS to the rural economy are large enough to

Table 5. Opinions of Type 2 informants on changes in daily wages of rural agricultural workers.

	Average wage (Standard Error)	
	Before MGNREGS (July 2006)	As of August 2011
Mean wage rate in INR	66.68 (1.95)	143.90 (4.43)
Female labourers in INR	48.43 (1.76)	111.96 (2.88)
Male labourers in INR	103.33 (3.82)	223.73 (7.26)
Male to female ratio in mean wage rates	2.13	2.00
Estimated share of wage increases attributable to MGNREGS (%)	64.30 (2.39)	

have an effect on local market equilibriums. For example, the sum of earnings paid under MGNREGS over 2010–11 in the Sivaganga district corresponded to approximately 1.1 per cent of the estimated net domestic product of the district. At the aggregate level of Tamil Nadu it was approximately equal to 3 per cent of the state's agricultural GDP (Gross Domestic Product) or 39 per cent of the Tamil Nadu government expenditure.

The interviews with our Type 2 respondents, selected for their knowledge of the local labour market, provided us with some insight into the development of private wage levels in the surveyed region. Table 5 displays the averages for their qualified estimates about these changes when comparing the situations before the introduction of MGNREGS and at the time of our survey. The estimates generally correspond with official data on rural agricultural wages for the more aggregate level of Tamil Nadu (Reserve Bank of India, 2012). Both types of data suggest considerable increases in wage rates (in current prices) ranging from 115–40 per cent over the period between July 2006 and August 2011. Comparing these estimates with the 81 per cent increase in the composite consumer price index for rural Tamil Nadu (Reserve Bank of India, 2012) also confirms significant increases in real wages.

Naturally, not all changes in wage rates can be attributed to MGNREGS, although the majority of Type 2 respondents shared the opinion that the work scheme accounts for a significant portion. On average, they attributed 64 per cent of the reported wage growth to its implementation. However, such a high figure must be regarded with caution. We noted some inconsistencies during our interviews when discussing other potential determinants of wage increases. Imbert and Papp (2012) estimated that average daily wages of agricultural labourers in the five best MGNREGS implementation states (including Tamil Nadu) increased in the early implementation districts 10 per cent more than in the late implementation districts. We can expect that the share in the wage growth of rural workers attributable to MGNREGS in our main focus area in Sivaganga district would probably be well above this 10 per cent margin. This implies significant welfare gains for households which primarily obtain their livelihoods from casual work (57 per cent of our Sivaganga sample), though we are not able to provide more exact quantification here. Interestingly, Imbert and Papp (2012) estimate that even after accounting for some adverse effects on private employment, these second round effects attribute for 20–60 per cent of the aggregate welfare gains from MGNREGS.

The results in Table 5 also suggest that women's wages increased comparatively more than men's wage rates (male to female wage ratio decreased from 2.13 to 2.0).

Since MGNREGS in the surveyed area is predominantly used by women, the scheme can indeed be considered as a reason for the observed 7 per cent improvement in the relative gender wage disparity. We can also see that the MGNREGS wage rate probably acts as an effective benchmark for women's wages in the private sector. This is not the case with the wage rate for male casual workers; the dramatic growth in their wages suggests that factors other than MGNREGS have also played a considerable role in increasing private sector wage rates. In fact, the absolute addition to the wage rate was almost two times higher for men so the absolute difference between men's and women's wage rates widened considerably.

Opportunity costs and forgone income should also be considered when discussing gains from MGNREGS (Ravallion, 2008; Jha *et al.*, 2012). Although our data does not allow for exact quantification of foregone income, our interviews with both Type 1 and Type 2 respondents have revealed that it is an important issue. As much as 82 per cent of the respondents from MGNREGS participating households in the Sivaganga sample reported that their families have given up some of their previous wage employment because of participation in the scheme. At the same time, we noted that the local labour market is quite segmented and that people participating in MGNREGS prefer this option over casual employment in the private sector even if they could earn more in the latter. Importantly enough, the interviews with local employers and other Type 2 respondents nevertheless revealed that their main criticism of MGNREGS is not directed towards the effects on private sector wages but towards changes in priorities of local people including their willingness to work (discussed later).

Change in socio-economic situation of households

With earnings from MGNREGS forming a notable part of the budget, the majority (57 per cent) of interviewed families in the Sivaganga sample who benefited from the scheme reported an improvement in their financial situation over the last two years (Table 6). On average, however, a slightly more positive development was found for the rest of the non-participating households. It thus comes as no surprise that the variable of participation in MGNREGS did not prove significant when running the regression with the change in financial situation considered as the dependent variable (Table 7).

Another interesting finding from this exercise is the comparatively less favourable change in the financial situation of small-scale (but not marginal) agricultural landowners. This may be related to the hypothesis (also raised in several of our interviews with farmers) that the wage hikes and shortage of casual agricultural workers induced by MGNREGS (discussed below) have affected this group of landowners comparatively more than marginal farmers (who do not hire workers) or bigger farmers (for whom mechanization may be a way of dealing with the scarcity of manual labour).

Table 6. Distribution of households in Sivaganga sample according to reported change in financial situation over the last two years.

	Worsened ← No change → Improved							Average
Scale	1	2	3	4	5	6	7	
MGNREGS participants (%)	0.7	3.6	13.0	25.9	30.5	19.5	6.8	4.78
MGNREGS non-participants (%)	0.8	3.9	14.1	19.5	19.5	25.8	16.4	5.22
Whole sample (%)	0.7	3.6	13.2	24.8	28.5	20.7	8.5	4.82

Table 7. Correlates of financial change of households over the last two years.

Predictors	B	Std. Error
Participation in MGNREGS	0.251	0.194
(E) illiterate	−0.349	0.158**
(E) elementary or middle	0.096	0.195
(E) higher than middle	Dummy	
(O) farming	−0.528	0.244*
(O) casual work	−0.869	0.213***
(O) other	Dummy	
(L) no land	−0.751	0.342**
(L) up to 1 acre of irrigated or 2 acres of non-irrigated	0.063	0.341
(L) up to 2.5 acres of irrigated or 5 acres of non-irrigated	−1.080	0.353***
(L) more than 2.5 acres irrigated or 5 acres non-irrigated	Dummy	
Nagelkere R^2	0.261	

Significance at *10%; **5%; ***1%. (E) – education of adult members; (O) – main source of income; (L) – ownership of agricultural land. Controlled for specific village-level characteristics. Other examined household-level variables have been found insignificant and with negligible impacts on other parameters.

Table 8. Self-reported poverty dynamics (percentage distribution; in parentheses shares of households participating in MGNREGS in a given category).

	Sivaganga			Thanjavur
	% of all households	% of MGNREGS households	Average no. of MGNREGS work days	% of all households
Always poor	24%	(85%)	67	61%
Never poor	43%	(76%)	76	21%
Escape from poverty	25%	(82%)	61	13%
Fall into poverty	8%	(79%)	68	5%
Poor before	49%	(83%)	64	74%
Poor now	32%	(84%)	67	66%
Net change	−17%	–	–	−8%

We attempted to capture socio-economic change by examining self-reported poverty dynamics, presented in Table 8. Here, the self-reported poverty status of the household was determined solely by having respondents themselves choose one of the predefined categories without any effort to control their income or material wealth characteristics. The results show significant dynamics (escapes from poverty and falls into poverty) and generally more positive development in the Sivaganga sample. If MGNREGS is a reason, then it is primarily because of its second round effects noted above. This is suggested by the rather similar share of the MGNREGS beneficiaries in particular categories of self-reported poverty status. Even within the category of households which reported that they have never been poor, 76 per cent were MGNREGS beneficiary households with quite a high average number of work days (76).

We additionally investigated specific reasons for upward (escape from poverty) or downward (fall into poverty) mobility and categorized these findings. Similarly as in previous studies (e.g. Krishna & Shariff, 2011) we found that different types of reasons

tend to explain upward and downward changes and again we also noted some differences between the Sivaganga and Thanjavur samples. In both districts, unequivocally the most important reason for escape from poverty was gain of additional income, mainly from new regular employment for a household member. In one third of such cases in the Sivaganga sample this was associated with out-migration of a family member for work (often abroad). Importantly, income from MGNREGS was mentioned as the second most important reason for escape from poverty in the Sivaganga sample. By contrast, financial problems were reported as the main cause for falling into poverty among households within this sample. Various family burdens such as death of a spouse, health problems, or marriage expenditures represent the second notable group of reasons for falling into poverty. The latter holds for the Thanjavur respondents too, while they additionally put comparatively more stress on problems related to water scarcity and lack of irrigation for their farm activities.

Views on MGNREGS usefulness

Figure 1 shows subjective assessments of the usefulness of MGNREGS by different groups of respondents. One apparent finding is the contrasting assessments obtained from Type 1 and Type 2 respondents. Unsurprisingly, the supplementary income from MGNREGS employment was the most frequently reported reason for the positive views in general sample of households. At the same time, we clearly realized that the large majority of families tended to consider the MGNREGS as an opportunity solely for employment of women and more senior workers, while it is normally not an option for younger or middle-aged males. The most frequent complaint about the scheme was its low wage rate and the quota of 100 work days. Less often did we record complaints about various organizational deficiencies. Many of our Type 1 respondents even admitted that MGNREGS has generated adverse impacts on local agriculture but these problems are considered of secondary importance in comparison to the welfare benefits.

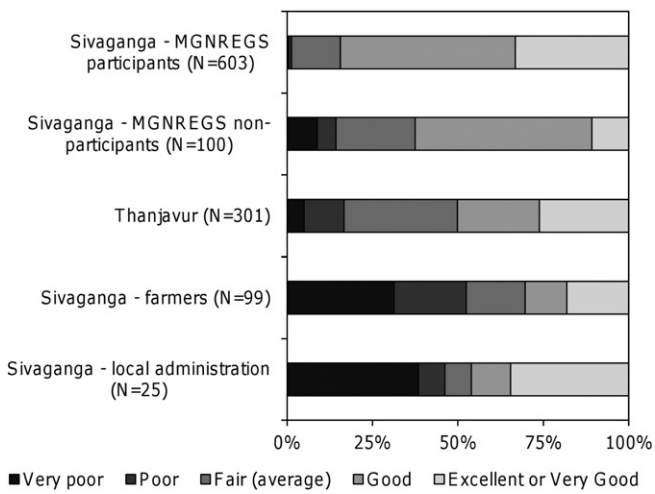

Figure 1. *Structure of opinions on usefulness of MGNREGS.*
Note: Due to low awareness of MGNREGS in the Thanjaur sample, only 57 per cent of respondents from this sample answered this question. Of those, 86 per cent were respondents from beneficiary households.

As the last two categories in Figure 1 suggest, the answers of Type 2 respondents were quite polarized. Some of them expressed positive views on MGNREGS, again mostly referring to its tangible pro-poor benefits. Around a half of the Type 2 respondents, however, denounced the scheme, often in quite a radical way. In both Type 1 and 2 samples, the more negative views were expressed by those respondents with larger landholdings, though the exceptions to this pattern were also recorded. The criticism was focused predominantly on its adverse effects on agriculture. Type 2 interviewees firmly held that MGNREGS has significant harmful effects on the local labour market. More than 90 per cent of these respondents agreed with this statement, instead of choosing a more moderate alternative. Several of the interviewed farmers reported that they had to reduce or cease their farming activities and they attributed these problems at least partially to MGNREGS. In fact, several of these critical voices support earlier findings on a rise of social tensions associated with the 'successful' MGNREGS implementation (e.g. De Neve & Carswell, 2011).

Of the interviewed village officials, several also felt uneasy with this situation, although they were sometimes reluctant to share such critical opinions with us. For example, a panchayat president, who initially chose the 'excellent or very good' option when assessing the usefulness of MGNREGS, later in our interview explained:

> You know I am a panchayat president so I have to praise MGNREGS because it is a government scheme . . . and people in our village get some extra money from it. But frankly, most of the works undertaken are useless and agro-business is seriously affected (pers. comm., 31 July 2011).

We have also noted several references directly or indirectly suggesting significant segmentation of the local labour market and indicating different effects of MGNREGS on different industries. For example, an owner of a brick factory located at the edge of one of the surveyed villages explained that he felt unaffected by MGNREGS because he solely employs migrant workers from Orissa as they are more productive and local people are not interested in such work.

As 34 per cent of Type 2 informants explicitly put it, MGNREGS is 'easy money without real work'. Although around half of the respondents admitted at least some added value concerning the creation and management of public assets, the quality and effectiveness of public works are generally considered low.

Possible effects on perceived problems and priorities

Several critical remarks by Type 2 respondents concern possible effects on people's priorities and their willingness to work. We tried to examine certain aspects of this by asking Type 1 respondents to arrange seven predefined categories of problems and six predefined categories of priorities for aid or assistance according to their perceived importance. We also ascertained other specific problems and priorities not covered by our predefined alternatives but no consistent type of answer surfaced. The main goal here was to compare the hierarchy of problems and priorities between the Sivaganga and Thanjavur samples and study the effects of MGNREGS participation.

Tables 9 and 10 show the average ranks assigned to individual problems and priorities and Table 11 examines the correlations of selected variables in a multiple regression framework. Employment-related issues generally rank high in the hierarchy of problems and needs. The respondents from Sivaganga district, where MGNREGS implementation is widespread, nevertheless tend to place relatively lower priority on these issues. They reported that unfavourable financial situation represents a more

Table 9. Ranking of perceived problems (average ranks; 1 = most sensitive problem; 7 = least sensitive; SD in parentheses).

	(P) Lack of work opportunities	(P) Financial situation is bad	(P) Education is low	(P) Health problems in family	(P) Poor housing conditions	(P) Environmental problems	(P) Not enough food
Sivaganga sample	3.26 (2.06)	2.71 (2.05)	3.75 (2.28)	4.85 (2.14)	5.38 (2.10)	5.94 (1.79)	6.61 (1.09)
Thanjavur sample	2.61 (1.99)	3.33 (1.84)	3.97 (2.09)	4.90 (1.85)	4.68 (2.12)	5.40 (2.15)	5.51 (1.93)
Average	2.94	3.02	3.86	4.88	5.03	5.67	6.06

Table 10. Ranking of perceived priorities for aid or assistance (average ranks; 1 = most needed; 6 = least needed; SD in parentheses).

	(A) For employment*	(A) For self-employment**	(A) For housing	(A) For training, skill development	(A) Food provision	(A) No aid required
Sivaganga sample	3.52 (2.04)	3.41 (2.20)	4.61 (2.02)	4.09 (2.00)	5.48 (1.24)	5.64 (1.29)
Thanjavur sample	3.16 (2.30)	4.48 (2.00)	3.52 (2.04)	4.91 (1.63)	4.68 (1.78)	5.94 (0.99)
Average	3.34	3.95	4.07	4.50	5.08	5.79

Figures correspond to the averages of ranks assigned by respondents. *Employment guarantee; **Assistance with starting own business.

Table 11. Correlates of selected perceived problems and priorities for assistance (ordered probit regression; dependent variables as in Tables 9, 10; beta coefficients; standard errors in parentheses).

	(P) Lack of work opportunities	(P) Financial situation is bad	(A) For employment	(A) For self-employment	(A) For training
Sivaganga (vs. Thanjavur sample)	0.471 (0.081)***	−0.503 (0.081)***	0.438 (0.136)***	−0.427 (0.084)***	−0.414 (0.085)***
Participation in MGNREGS	−0.246 (0.079)***	−0.081 (0.077)	−0.349 (0.133)***	−0.225 (0.083)***	−0.158 (0.083)*
Nagelkere R^2	0.112	0.137	0.054	0.114	0.082

Significant at *10%; **5%; ***1%. Note that negative coefficients predict lower rank (that is higher relevance) of a given problem or form of assistance. Controlled for various household and village level characteristics including education of adult members, main source of income, experience with migration, indebtedness, self-reported poverty, household size, ownership of private toilet, presence of industrial unit in a village.

sensitively perceived burden rather than a lack of work opportunities. Similarly, assistance with self-employment (starting own business) was prioritized higher than the need for guaranteed employment in this sample. The differences in rankings between the Sivaganga and Thanjavur samples are robust and remain significant when controlled against other observable variables (Table 11). In addition, the results in Table 11 also show significant negative effects of the participation in MGNREGS on the employment-related variables. In our view, these findings provide a simple illustration of possible changes in the behavioural characteristics of local people that can at least partially determine problems caused by MGNREGS on the supply side of the local labour market.

Table 12. Distribution of respondents according to minimum acceptable wage rates for migration and MGNREGS-like work.

		What is the minimum daily wage you would accept to migrate out of your village for work?		
	Wage in INR	Up to 150	151 and more	Not an option
What is the minimum daily wage you would accept to carry out a kind of manual work as undertaken under MGNREGS?	Up to 150	9.4%	46.2%	21.8%
	151 and more	0.9%	10.8%	2.5%
	Not an option	–	4.2%	4.2%

MGNREGS and migration

One third (33 per cent) of households in the Sivaganga sample reported experience with long term (more than three months) migration of a family member (mostly males) for work and another 5 per cent reported experience with seasonal migration. The average duration was 46 months with a median value of 24 months. Migration abroad (41 per cent to Dubai, 20 per cent to Malaysia and 20 per cent to Singapore) and to Indian cities were similarly prevalent. Given the high intensity of out-migration, Sivaganga district can be considered a region where the effects of MGNREGS on migration should be clearly detectable.

Our findings, however, contradict this and suggest negligible effects of MGNREGS on migration. As many as 93 per cent of respondents from households that participate in MGNREGS explicitly stated that the members of their households would not consider migrating elsewhere for work if there was no employment under MGNREGS. This also holds for 91 per cent of households with experience of long-term migration and for 80 per cent of those whose members have been migrating seasonally. A similar picture was obtained when we examined the minimum wage for which our respondents would accept migrating for work against the minimum wage for which they would accept MGNREGS-like manual work. Table 12 presents the distribution of respondents along these two dimensions and shows that only 9.4 per cent of households fall into the category subject to potential effects of MGNREGS on migration. Moreover, Figure 2 suggests that almost none of the respondents would accept the equivalent of the nominal MGNREGS rate of INR 100 (USD 2.2) for migrating elsewhere. Even when not accounting for other specific features of MGNREGS, such as the 100-day limit and the predominance of women workers, the findings presented here clearly imply that direct effects of MGNREGS on reduction of migration for work tend to be marginal in the present context.

Conclusion

The problem of insecurity related to lack of employment and livelihood opportunities has become a key challenge in rural India (Novotny & Ramachandran, 2010). The MGNREGS has emerged as a key response by the Indian government. It has become the first legally grounded social entitlement in India and a major redistribution mechanism. This article has contributed to wider debates over MGNREGS by a micro-data case study from Tamil Nadu. It has examined multiple impacts of MGNREGS under best-practice

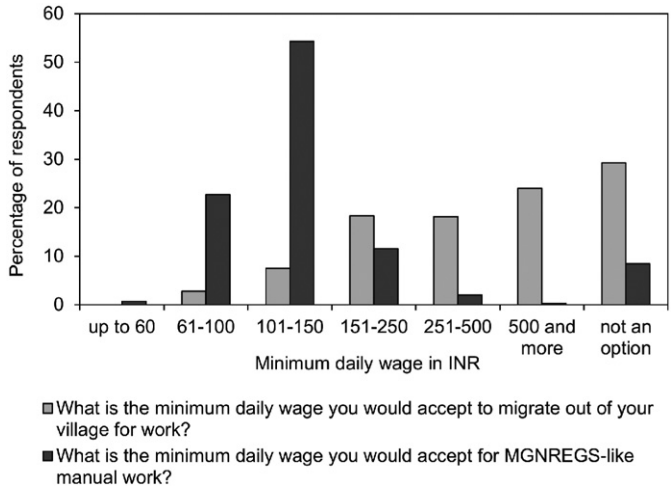

Figure 2. *Acceptable minimum wage rates for migration and MGNREGS-like work.*

implementation settings. As such, our goal was to provide a benchmark analysis demonstrating what impacts can be expected if various organizational obstacles behind MGNREGS are minimized.

In order to summarize the findings on the research questions raised at the beginning of this paper, we suggest a distinction can be made between different conceptualizations of MGNREGS as means of welfare provision, labour market policy and intervention directed towards other specific objectives such as empowerment of women, public assets and human capital building (and enabling mobilization of people to access their legally granted 'right to work') or reduction of distress-led migration among others. With respect to the impacts on economic welfare, our results showed that MGNREGS has been a factor in general improvement of socio-economic situation, though it is probably not the principal driver. The first-round welfare effects have been identified through wages paid under MGNREGS that represent a secondary but notable source of households' financial income. However, we have also found that the self-targeting as a key mechanism behind MGNREGS effectiveness is only partially in place, because of the wide availability of public works employment, their relative easiness and generally low women's wages in the private sector. If the provision of additional income to households was regarded as the sole objective, another form of cash transfer intervention would have probably served better than MGNREGS, especially when considering non-negligible opportunity costs of foregone income associated with participation in the work scheme.

Nevertheless, we have stressed that there are also important second-round effects on economic welfare of both participating and non-participating households due to upward pressure on private sector wages. In our case, it predominantly applies for women's wages where the MGNREGS rate acts as an effective benchmark for private sector wage rates. By contrast, MGNREGS is not an option for the young and middle-age male workers and the growth of men's wages observed in recent years in Sivaganga district should be attributed to other factors than MGNREGS implementation. A similar case can probably be made for most of Tamil Nadu and other parts of India where there is relatively small excess demand for MGNREGS employment and high gender wage disparity.

We have found that MGNREGS has uneven (due to the gender and other forms of labour market segmentation) but quite significant effects on labour market and on local economy. It has met the policy goals in that it empowered casual workers and weakened the monopsonic power of employers. Although this is an important improvement, we need to be careful about inferences on the aggregate labour market impacts. We noted that the deadweight loss effects and problem of crowding out private sector employment have also become an issue with the MGNREGS implementation, which questions the long-term sustainability of the intervention in the present design. Here again, it seems that the almost universal usage of the work scheme (weak self-targeting) limits its potential when regarded primarily an active labour market policy.

The unavailability of agricultural workers reported by local employers has often been attributed to behavioural changes associated with the MGNREGS implementation rather than to uncompetitive wages offered in private sector. Such impacts on the people's behaviour were also demonstrated by our comparisons of perceived problems and priorities. Both these findings suggest that people do not behave like rational economic agents. Their choices of whether to participate in MGNREGS, work in the private sector or spend their time in different way are not based solely on income maximization considerations. As such, it would be misleading to make expectations about the impacts of MGNREGS on labour market solely by economic analysis of equilibrium wage rates.

Regarding other MGNREGS objectives, the empowerment of women by expansion of their employment opportunities is a consequential effect that has taken place in the studied region. By contrast, we can firmly conclude that in the present context the public works scheme cannot be considered as an instrument for preventing involuntary migration. The usability of MGNREGS for public assets and human capital development is disputable, though notable differences exist among surveyed villages.

As a nation-wide scheme governed by relatively uniform rules across all India, MGNREGS faces a crucial challenge of considerable diversity of local circumstances. As such, no uniform effectiveness can be expected (Krishna & Shariff, 2011; Pani & Iyer, 2012). We showed that even in the good implementation conditions, MGNREGS effects are complex and not free of ambiguities. Although we have made clear that effects cannot be judged solely along one dimension, common broad interpretations promoting profound changes in all imaginable domains are no less erroneous. This case study from Tamil Nadu suggests a more nuanced approach is needed. Such an approach makes a distinction between the welfare, labour market and other effects of MGNREGS, considers local conditions and needs, and fine-tunes the design accordingly.

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