To what extent did the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA) Impact Women in Rural Areas?

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Abstract

This paper analyses the extent to which the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA) impacted women in rural areas. The paper achieves this goal by exploring and comparing various different research papers on the implementation of MGNREGA. The results are divided into 3 categories - the scheme's impacts on the rural labour market, on female empowerment and its indirect impacts on education and poverty. The results suggest that the program benefited women. It increased their wages, reduced the gender wage gap in some states, increased the probability of women being employed, increased their bargaining power in their household and increased the ability to meet their own needs. Despite the positive impacts, MGNREGA also led to an increase in violence against women. The scheme also led to increased spending on the education of women, complemented by an increase in the time children spent in their school and an increase in their grades. The poverty level of participants also reduced.

Introduction

Currently, we are in the fourth wave of feminism, which focuses on the empowerment of women, intersectionality and crimes against women (Encyclopedia Britannica). The Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA) scheme, implemented in 2005 in India, is the world's largest public workfare program that is partly aimed to empower women in rural India. MGNREGA tries to do this by providing a uniform wage across genders and giving priority to female employment in public works by mandating that one third of program beneficiaries need to be women. As a feminist, I believe it is important to analyse whether the scheme prevented discrimination against women, promoted gender equality, increased female participation in the labour force and influenced the crimes against women. It is essential to determine whether the scheme achieved one of its goals of promoting gender equality and female employment or instead succumbed to patriarchal ideologies prevalent in rural India. This will help me understand whether any structural policy changes need to be made in order to prevent discrimination against and employ more women. It will also help me understand how employment is provided to women, which helps me with my work with the Non-Governmental Organisation Myna Mahila.

The aim of this paper is to analyse the extent to which the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA) impacted women in rural areas. As a part of my aim to understand MGNREGA, I read many research papers on how the program was implemented and the different outcomes and evaluated the effects of the program.

Answering the question above is of personal interest to me as I am extremely passionate about issues regarding women's rights, such as crimes against women, the stigma around

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menstruation, and female unemployment, having done quite a bit of field work and gained practical experience for these issues.

I gained the most experience regarding the issue of discrimination against and employment of women while interning with an NGO called Myna Mahila. I have been interning with the NGO Myna Mahila for over a year now. My tasks include promoting sales of low cost and good quality sanitary pads and doing research on different ways to provide employment to women living in slums in Mumbai. MGNREGA employs both men and women living in rural areas. Doing research on the scheme will help me with my internship in many different ways. Analysing the specific effects of the scheme on women helps me understand different aspects of providing employment to women. Understanding the implementation of MGNREGA and exploring its results helped me gain some valuable insights on different factors that need to be considered when providing employment to women.

Overall, while there are some negative effects, I believe that MGNREGA positively impacted women living in rural areas. My research revealed that the program provided employment to 48 million people, by the financial year 2009-10 (Dey 2010). Consistent with its' goal of increasing female employment, the increase in share of public works as a result of the scheme has been higher for female workers than both men and Scheduled Caste / Scheduled Tribe (SC/ST) (a disadvantaged sector of society) workers. The participation rate of women in MGNREGA was 48.21%, which is higher than the mandated 33% (Dey 2010). The wages for female casual workers increased by 8% whereas the impact of male wages increased by 1% in MGNREGA districts. In some states, female participation in the region's gram sabha (the governing institution for every village) increased (Azam and Mehtabul 2012). The bargaining capacity of women increased and dependence on male family members decreased due to the income that they earned as a result of the employment the scheme provided. MGNREGA also increased the

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expenditure on food by 40% and on non-food consumables by 69%, and lowered emotional distress and anxiety among the participants by 25% (Ravi and Engler 2009). Children whose mothers participated in MGNREGA spent more time in school and attained a higher grade (Afridi, Farzana, et al 2016).Unfortunately, the scheme also led to a rise in the average rates of rape, kidnapping and domestic violence, while the rate of dowry related deaths decreased (Amaral, Bandyopadhyay, et al 2015).

This paper talks about my work with the NGO Myna Mahila and personal interest in the question at hand in section 2. Section 3 explores what MGNREGA is, its goals and implementation. The section also analyses the results of the research paper. The paper is concluded in section 4.

Personal Interest

As stated in the introduction, I am extremely passionate about gender equality issues. My passion has developed by gaining practical experience for the issue. Some of the work I have done in this field involves advocating for justice for a deceased rape victim through a national petition that received over 17,000 signatories, my menstruation project that distributed sanitary packets to over 2,000 underprivileged women and calling women living in slums during the first national lockdown to educate them about the pandemic and inquire if they needed anything.

I have also been interning with an NGO called Myna Mahila for over a year. The word Myna refers to the Myna bird and the word 'Mahila' means woman in Hindi. Myna Mahila is a Mumbai based NGO that aims to empower women by breaking the stigma around menstruation and by setting up workshops to produce low-cost sanitary pads. Myna also strives to find employment for women living in slums. The NGO tackles constraints and stigmas that prevent women from entering the workforce, like menstruation. Myna also aims to improve menstrual hygiene by

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raising awareness around menstruation and bringing affordable sanitary products directly to the women in need.

Being very passionate about the issues regarding discrimination against women, I wanted to do my part to help women during the first lockdown. While searching for ways I could have helped women stuck at home due to the COVID-19 pandemic, I came across Myna Mahila. In June 2020, I began work with Myna as a follow up calls volunteer. I was tasked with calling women living in Mumbai slums and speaking to them about the pandemic, their health, economic and household conditions and trying to help them by providing them with sanitary pads and rations. I worked on this project till mid-September. Inspired by the work that Myna did, I decided to join them as a Sales intern.

My tasks were to sell Myna Mahila pads to chemist stores, other NGOs and through online platforms. I also help develop marketing ideas to increase sanitary packet sales. Along with the Rotary Club of Bombay Queen's Necklace Charitable Trust and Myna, I raised and distributed sanitary pads worth Rs 250,000 to women living in slums and to sex workers.

Wanting to do more to help women, I started work as a research associate with Myna in January 2021. My responsibilities include researching different ways and programs to employ women. This helps Myna come up with different ways to employ women living in slums.

Researching the implementation and effectiveness of MGNREGA helps me understand the different aspects the Government considered in order to provide employment to people living in rural areas. It also helped me understand how the job market for people close to the poverty line works. Working with Myna led me to do a lot of research about the discrimination against women in the job market and the numerous challenges they face. Researching MGNREGA's

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impacts on women in the labour force helps me understand whether the scheme discriminated against women. It also helps me understand how the scheme broke gender barriers and empowered women and provided both genders with equal pay to avoid discrimination.

Through this research, I hope to find answers for what factors need to be considered while providing employment to women? How does the employment provided benefit women? How do you guarantee the safety of women? What are the indirect effects of female empowerment on society?

What is MGNREGA?

National Rural Employment Guarantee Act (NREGA), which was renamed to Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2009, was launched in 2006 under Prime Minister Manmohan Singh. MGNREGA is the world's largest workforce program that aims to guarantee the 'right to work' to people living in rural India. The scheme provides a legal guarantee for up to 100 days of annual employment at a predetermined wage rate to rural households willing to supply manual labor on local public works.

MGNREGA was implemented at a time when there were two different India's: a thriving urban India and a stagnant rural India. The primary goals of the program involve reducing the inequality between rural and urban India, increasing wage employment and promoting inclusive growth. The primary goals include increasing female empowerment and reducing the wage gap between men and women. The secondary goals involve strengthening natural resource management through works that address the causes of chronic poverty, like drought, and encourage sustainable development. The Act is also aimed to strengthen democracy at the grassroot level, incorporate transparency and accountability in the government.

Consistent with one of its' goals of promoting gender equality, the wages offered to participants of the program is uniform across genders. The Act also mandates one third of the beneficiaries to be women, giving priority to female employment. To further make employment and job opportunities more conducive for rural women, the MGNREGA implemented provisions such as the provided work being within a radius of five kilometres from the woman's house, absence of a male worksite contractor, flexibility to choose months of employment and establishment of child care centres.

In order to get a job, interested members of rural households need to apply for a job card at the local Gram Panchayat of their region in which they reside. Gram Panchayat is the lowest level of administration in the Indian government, comprising a group of villages. After the verification process, the Gram Panchayat issues the applicant a Job Card, ideally 15 days after the application (Azam and Mehtabul 2012). After receiving this Job Card, workers can apply for any work at any time. If the MGNREGA applicants are not given a job within 15 days of applying, the state pays them unemployment compensation. Gram Panchayats and block levels (intermediate level of government between Gram Panchayat and district) plan a series of projects to be undertaken at the start of every fiscal year, as a part of the operational program cycle.

The Act, targeted towards casual workers (daily wage workers), is designed to incentivize states to provide employment as 90% of the employment cost is borne by the Central government (Dey 2010). According to Azam and Mehtabul (2012), the centre bears the entire cost of wages of unskilled manual workers and 75% of the material cost and wages of the skilled and semi-skilled workers, while the state bears the remaining 25% material cost and wages of skilled and semi-skilled workers. The state also bears the cost of unemployment allowance that is paid to the applicants when the government cannot provide employment on time, within 15 days of

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their application (Azam and Mehtabul 2012). This further encourages the state to provide employment to the interested applicants, to avoid paying unemployment compensations.

There is no fixed eligibility criteria for MGNREGA, but it is assumed that the nature of work and wage rate offered is targeted to only attract the poor. Applicants have no influence over the choice of the project or job they are provided with. The scheme does not provide the workers with any training opportunities.

In February 2006, the first phase program was implemented in 200 districts in India. According to Government documents, the scheme was rolled out to the poorest districts first. However, the algorithm the government used to decide which districts would receive the program is very vague and is not publicly available. Given the political interest and awareness of MGNREGA, it seems likely that the government adhered to political fairness norms in the allocation of these districts. There must have been some slippage and political manipulation in the allocation of the districts but the fact that neither the press nor NGOs complained about the allocations suggests that the manipulation was not rampant (Zimmermann, 2012). Phase 2 included implementation in 130 additional districts in April 2007. MGNREGA was implemented in the remaining rural districts in the year 2008-09 as a part of the third phase. The implementation has also been different in different states, based on the state's government.

How did MGNREGA Impact the Rural Labour Market?

This section explores three papers that research the impact of MGNREGA on the rural labour market.

The main aim of the paper by Azam and Mehtabul (2012) is to analyse the impact of the Indian job guarantee scheme on labor market outcomes. The authors assess the causal impacts of MGNREGA on different labor market outcomes like public works participation, labor force participation, and real wages of casual workers.

The paper uses nationally representative data from Indian National Sample Surveys (NSS). The NSS data used classifies workers into three groups – self-employed, regular salaried and casual workers. The paper and MGNREGA focuses on casual workers. Additionally, the Employment and Unemployment round for the year 1999-00 was used to test for different trends between MGNREGA and non-MGNREGA districts before the scheme was implemented in any of the districts. The phase wise implementation of the program across districts all over India from 2006 to 2009 creates a 'natural experiment', which is exploited by the paper. The difference-in-difference (DID) framework is used to estimate the results. The data used by Azam and Mehtabul contained all districts from 18 major states in India. The identification strategy relies on the scheme being implemented in treatment districts compared to it being not offered in control districts. The DID estimates measure the difference in outcomes between the treatment and control districts known as 'Intent to Treat' (ITT) effect. ITT is an average of the causal effects for those who actually participated in MGNREGA and those who did not, in MGNREGA districts. In order to use DID, the outcomes in the treatment and control group needed to be measured before and after the program.

Overall, labour force participation declined between 2004-05 and 2007-08 but the decline was lower in MGNREGA districts compared to others, due to the implementation of the scheme. There was a 2.5 percentage point increase in the probability of casual workers being engaged in public work programs, while the probability of women casual workers for the same increased by 4 percentage points in districts in which the scheme was implemented. The increase in
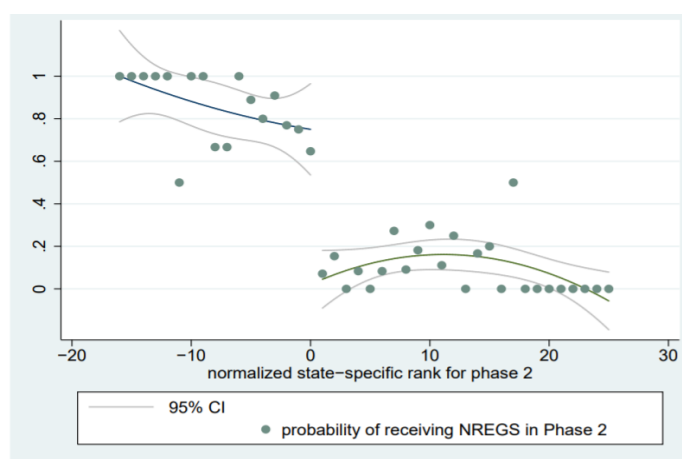
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probability of women casual workers being engaged in public work programs was almost double that of men. The scheme also had an impact on the wages of workers. Overall, casual workers earned a 5 percent raise in real wages in MGNREGA districts. The prevailing gender wage gaps between men and women reduced as a result of MGNREGA as the wages for female casual workers increased by 8 percent while the wages for male casual workers increased only by 3.8 percent. The paper analysed that female workers have benefited from the implementation of MGNREGA as are more likely to get employed and earn more. I surmised from the paper that MGNREGA has had a positive impact on the labour force, especially female workers, in the rural districts in which it has been implemented.

Zimmermann (2012) analyses the rural labour market impacts of MGNREGA by using a Regression Discontinuity (RD) design in the paper. The paper exploits the fact that while the program was phased in a non random manner, it was first introduced in the poorest districts according to an underlying development index. The dataset used by Zimmermann was collected after the phase 1 and 2 district implementation, but before the rollout was done to phase 3 districts. Thus, the cutoff between phase 2 and 3 was used to analyse the results of MGNREGA in this paper.

The algorithm that Zimmermann created for calculating which districts would be part of which MGNREGA phase implementation involved a two-step procedure - the number of eligible districts that were allocated to each state, and followed by the districts being chosen based on their ranking within the state. This led to the regression discontinuity cutoffs being state specific. This led to the treatment cutoffs being different for each state. For empirical analysis, the district ranks used were state specific and are normalized. A district with a normalized state-specific rank of zero was considered as the last district in the state that would be eligible for receiving MGNREGA implementation during phase 2. Using this, data was pooled across states to

estimate the treatment effect at a common discontinuity. Districts with lower ranks than the cutoff

rank of the state were assigned negative index numbers. Districts too developed to be eligible

according to district ranking that were ranked above the cutoff rank for the state were assigned

a positive index number. The districts with a positive index functioned as control districts for the

analysis.

Figure 1 - Discontinuity of treatment status for phase 2

Source: Zimmermann (2012) Pg 44

Figure 1 verifies that there was a discontinuity in the probability of districts receiving phase 2

implementation of MGNREGA at the cutoff value of each state. This has been shown graphically

for the normalized state-specific cutoff for Phase 2. The figure plots the probability of each

district receiving MGNREGA in phase 2, corresponding 95 percent confidence intervals on

either side of the cutoff. The graph suggests that the probability of receiving phase 2

implementation jumps down at the discontinuity (normalized state-specific rank of 0) by almost

75 percentage points. If the rank for the district is positive, the district is less probable to receive

phase 2 MGNREGA implementation and if the rank for the district is negative, the district is

more probable to receive phase 2 implementation of the program. This shows that there is a

discontinuity in the probability of being treated by the scheme at the cutoff.
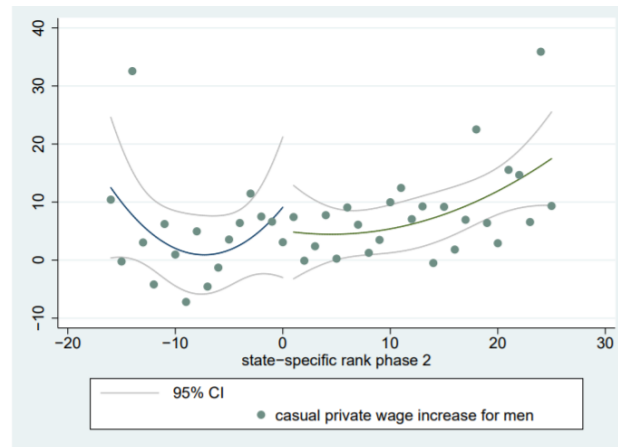
However, in order for the RD to be valid, districts should have imperfect control over their treatment status. This means that states and districts should not have been able to manipulate its index or rank. This manipulation is unlikely as the index was made and assigned based on slightly dated data from the early to mid 1990s instead of current data, in order to limit the ability of states to misreport information.

While there may have been some slippage and political manipulation regarding the choosing of MGNREGA districts in the different phases, there have been no major complaints by NGOs or the press regarding manipulation in the allocation of districts. This is a significant achievement as the program was originally planned to be implemented much more slowly. This would result in much greater benefits to districts in which the program was implemented first, in relation to the districts where the implementation was late.

The results suggest that the program seemed to successfully provide employment during the agricultural off-season and after idiosyncratic shocks, which allowed households to earn additional income. Citing past research, Zimmermann states that employment increased by 0.3 days per prime aged adult per month and there was a 4.5% increase in private sector wages. Contrary to expectations, MGNREGA doesn't seem to have a large impact on public-sector casual employment. The estimate is positive but small and statistically insignificant. This contradicts the results from the previous paper by Azam and Mehtabul (2012). The scheme also doesn't have a large impact on private casual employment. The estimated negative coefficient is consistent with the idea that MGNREGA crowds out some private sector employment, but the numbers are statistically insignificant. The paper suggests that the probability of being employed in a public works project for women is typically positive and larger than for men as a result of the

program, however the estimates are relatively small in magnitude and are also statistically insignificant.

Figure 2 - MGNREGA impact on male private wage, extensive margin

Source: Zimmermann (2012) Pg 45

The above graph, figure 2 shows that implementation of MGNREGA did not have any impact on male private wages. At the state-specific rank of 0, which is also the point of discontinuity, the difference in private wages is small in absolute value and statistically insignificantly different from 0. Data from the paper suggests that the private wage of men increased by 1 rupee in the treatment districts relative to the control districts where MGNREGA was not implemented in phase 2. The average wages across districts is 66 rupees, and so the percent changes in the wages is relatively small.

On the other hand, the private sector wages for casual work for women increased. The female daily casual wage increased by about 11 rupees which is a wage increase of 25%. The magnitude of this result is relatively robust across different statistical specifications. However, this increase in wages is confined only to the main agricultural season, rather than the dry season. The results show that female private wages increase by 19 rupees during the

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agricultural season, but only by about 3 rupees during the dry season. This is consistent with the idea that there is no real impact on the Indian labor market during the dry season. The results from this paper suggest that the most important function of MGNREGA may be to indirectly enforce minimum wages in the private sector during the agricultural main season. Overall, the impact on the rural labour market is limited as male private sector employment was barely impacted by the scheme. However, the increase in female private sector wages shows that the program is particularly attractive for women.

From this paper, I inferred that MGNREGA had a positive but statistically insignificant impact on public casual employment. The scheme also did not have a negative impact on private casual sector employment. Private sector wages rose substantially for women and not for men during the main agricultural season.
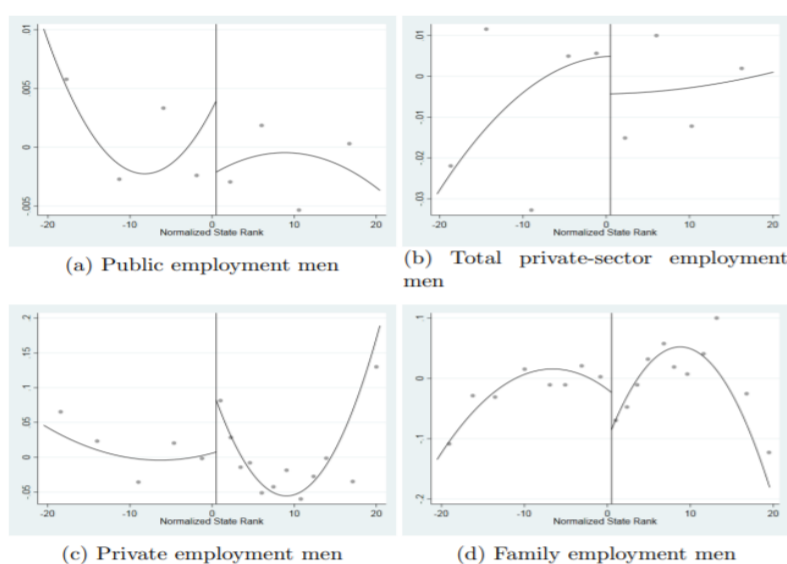
Another paper authored by Zimmermann (2020) aims to analyse the employment impacts of MGNREGA using a novel regression-discontinuity design in order to find out whether the program acts as a safety net for participants, enables them to take on more risks and crowds out private sector jobs.

The methodology used by Zimmermann to calculate the results using Regression Discontinuity (RD) is the same as the last paper. The results suggest that the program had no negative impact on total private sector employment and there was no crowding out, which reinforces her results from the previous paper (Zimmermann 2012). Following the implementation of MGNREGA, workers moved from private casual wage employment to family employment. This shows that they were willing to take up more risks. Zimmermann inferred that workers in high-risk districts would demand MGNREGA to create a buffer stock for bad shocks. The

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research found that MGNREGA take up was higher in high-risk districts. However, the shift from private casual employment to family employment happened in both high and low risk districts.

Citing past research, Zimmermann states that households took on more risk after the implementation of MGNREGA by growing riskier cash crops which have a higher expected return and the participation in public work projects in Andhra Pradesh increases after low rainfall. Zimmermann also states that agricultural wages increased by 5 percent in districts with high implementation quality, 6 to 11 months after the program was implemented.

Figure 3 - RD Results

(a) Public employment men

(b) Total private-sector employment men

(c) Private employment men

(d) Family employment men

Source: Zimmermann (2020) Pg 25

Figures a and b are graphical representations of the take up of public employment after the introduction of MGNREGA as well as crowding out of total private sector employment. According to figure a, public employment appears to be higher in phase 2 than phase 3 at the cut off, but the magnitude of that is really small. This suggests that there was no economically meaningful take up of MGNREGA after the program was implemented and no crowding out of

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total private sector employment occurred. The probability of men working in private employment dropped in districts where MGNREGA was implemented early. Despite the low actual take up of the program, it impacted the kind of private sector jobs workers chose. The probability of men working in private casual employment decreased by 6.65 percentage points while the probability of men entering family employment increased by the same magnitude. This shows that there was no overall crowding out in the private sector but people switched jobs from private casual employment to family employment.

In many districts, the stipulated minimum wage for MGNREGA is higher than the equilibrium wage in the casual private sector at the baseline. This should make public work employment under the program especially attractive. But, evidence suggests that men left the casual private sector and moved to family employment in MGNREGA districts. This is consistent with the idea that the availability of the scheme after bad economic shocks lowers the risk of entering family employment, which leads to men leaving the private casual sector.

The three papers above evaluate the impact MGNREGA had on private and public casual employment and wages. Based on the information from the papers, I inferred that MGNREGA had a greater impact on women than on men. While the implementation of the scheme increased the probability of both men and women working in public work programs and the real wages earned by casual workers, the increase and impact was greater for women than men. This is consistent across the 3 papers. This impact may be because MGNREGA is more attractive for women as the wages women earned before MGNREGA was lower than the stipulated minimum wage of the scheme. On the other hand, for men, the wages pre-MGNREGA was equal to or higher than the MGNREGA minimum wage in most cases. This made women more interested in the scheme than men and the wage impact and probability of their public work employment was higher than that of men. The program did not have a

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statistically significant impact on the private wages of men while the private sector wages for women casual workers increased. There was also no negative impact in the form of crowding out on total private sector employment. The MGNREGA acted as a safety net for many which enabled them to leave their private casual jobs and enter family employment.

When talking about the impact the scheme had on public employment, Zimmermann's and Azam & Mehtabul's results contradict each other. This contradiction could be because of the different statistical models and data used by the author's papers. The first paper by Azam and Mehtabul (2012) uses the Difference in Difference (DID) method to calculate their results. The paper refers to the districts where MGNREGA was implemented in phase 1 as the treatment group and districts where implementation occured in phase 2 as the control group. As established by all three papers, districts with phase 1 implementation were the poorest 200 districts. The second and third paper by Zimmermann (2012 and 2020) used regression discontinuity to get its results. Districts with phase 2 implementation were considered as the treatment group, while similar districts with phase 3 implementation were used as the control group. Due to the districts not being the poorest districts out of all in Zimmermann's papers, the treatment and control groups mirror each other for Zimmermann's papers more than that for Azam and Mehtabul's paper. This can be the reason why the results from both papers are different.

How did MGNREGA Impact Women?

This section analyses two papers that look at the impact of MGNREGA on women from rural areas.

The paper by Pankaj and Tankha (2010) examines the impact of MGNREGA on rural women living in Bihar, Jharkhand, Rajasthan and Himachal Pradesh (HP), using a field survey. The authors believed that the effects of MGNREGA would be observed more clearly in states where women faced poor socio-economic conditions and where their participation in social and community development processes had traditionally been weak. Thus, the states were selected from North India based on their human and gender development indicators as their indicators (other than for HP) were poorer than those of their Southern counterparts. Out of the four states selected, MGNREGA implementation was better in Rajasthan and HP compared to Bihar and Jharkhand. This gives the results of MGNREGA on states with better and poor implementation.

The selection of districts from the four states was based on factors like the SC / ST population, overall and female literacy rate, agrarian conditions, overall implementation of MGNREGA in the district, and participation of women, person days per household and number of works undertaken. Based on this, the following districts were chosen - Gaya (Bihar), Ranchi (Jharkhand), (Rajasthan), and Kangra (HP).

The survey was conducted using a two stage purposive and random sampling technique. In the first stage, states, districts and blocks were selected purposely. In the second stage, worksites and women workers were selected randomly. Structured and unstructured interviews and focused group discussions were also used.

MGNREGA enabled women workers to become independent bread earners with control over their earnings. This had significant empowerment effects, such as greater decision making roles within their family, and the discretion to spend and control the use of their earnings. The average number of hours women spent on unpaid work is high and their contribution to the household's

income and welfare was unaccounted for and unappreciated. Employment through MGNREGA helped women convert a part of their unpaid hours of work to paid hours of work.

68% of female workers, across the 4 districts, were collecting the MGNREGA wages themselves. 55.6% of women from the sample retained upto 25% of their wages, and 8.1% of the women retained more than 50% of their wages. However, 29% of women surrendered their entire income to a male member of their family. The women that kept a part or whole of their MGNREGA wages were able to choose where the money was used. Pre-MGNREGA, 44% women said that they were able to meet their personal needs through their own earnings. Post-MGNREGA, 71% women were able to do so. In 2004, pre-MGNREGA, the average daily wage of a female casual worker was 63% of that of a male casual worker. MGNREGA achieved equal pay for both male and females to some extent. According to the survey done by Pankaj and Tankha, men and women were paid different wages only in 1 out of 13 worksites.

A majority of the women employed under MGNREGA did so out of their own volition. 57.9% women joined MGNREGA because they chose to do so, while 37.9% joined because they were made to work by the head of their household. While women's participation in other MGNREGA processes, like the selection of works, social monitoring and auditing, was almost negligible, participation of women in gram sabha (governing body for villages) meetings increased. 45% of women attended gram sabha meetings held in connection with MGNREGA.

Prior to the implementation of MGNREGA, only 16% of women workers' households had a bank account and most of the accounts were in the name of male family members. Post MGNREGA implementation, 72.8% of women workers' households got bank accounts and 35.5% of women got accounts in their own name. Having accounts in their own names increased the women's chances of controlling their earnings and led to the development of a saving habit.

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Despite the positive effects of MGNREGA on women, 81% female workers felt emotionally strained while working as their children were left at home unattended or in someone else's care. 35% of women even reported various types of harassment at worksites. Field reports even suggested that single, divorced, separated and older women were excluded in some places.

While results from this paper indicate that MGNREGA had a positive economic impact on women, some other papers suggest that the implementation of the program led to an increase in crimes against women.

The paper by Amaral, Bandyopadhyay and Sensarma (2015) analyses the relationship between female participation in MGNREGA and violence against women. This was done by exploiting the district-time variation in the implementation of MGNREGA and using a Difference-in-Difference (DID) estimate to obtain the causal effect of increased access to employment and female labour force participation because of MGNREGA on the reported crimes against women.

According to the Indian Penal Code, crimes against women are rape, dowry, domestic violence, kidnapping, molestation and sexual harrassment. The authors used district year reported crimes from the National Crime Records Bureau annual publications for the years 2001-10 to track the reported cases of crimes against women.

To isolate the effect of MGNREGA, the DID estimation strategy was used to compare the police reported cases against crimes against women in phase 1 districts before and after MGNREGA implementation with reported cases from phase 3 districts before and after MGNREGA implementation. The authors control for the effects as a result of national legislative

improvements to human rights such as the 2005 Amendment to the Hindu Succession Act or the Domestic Violence Act of 2005. The data from phase 1 districts are compared with that of phase 3 districts instead of phase 2 districts to allow sufficient time for a post-MGNREGA effect.

If it is assumed that the crimes against women between Phase 1 and Phase 3 districts were not different prior to MGNREGA implementation, the results may not have been accurate if the different poverty levels of the districts correlated with the number of cases reported. The paper mitigates this problem by controlling for time variant socio-demographic characteristics, time-invariant effects and year effects.

There was a national increasing trend in reported gender based crimes post MGNREGA in 2005. The results show an increase in the average rates of rape, kidnapping and domestic violence and decrease in the avergae rate of dowry deaths after the implementation of MGNREGA. Kidnappings increased by 11.7 percentage points, significant at the 10% level. The increase in the amount of time the women spent outside their homes during their work commute as well as at unsecured workplaces could have led to this increase. Sexual harassment increased by 35.5 percentage points, significant at the 5% level. Domestic violence increased by 20.5 percentage points, significant at the 1% level. Men in the family could have lashed out against the financially independent women using violence and abuse. Dowry deaths reduced by 28.8 percentage points, significant at the 5% level. Due to the wife earning and her income being used by the family, the husband's family would need to demand lower dowry payments from the woman's family, leading to lower dowry deaths. Overall, total violence against women increased by 10.4 percentage points, significant at the 10% level.

The 2 papers above focus on the impacts MGNREGA had on rural women. The first paper looks at economic and social impacts on women participating in the program. The second paper looks

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at the increase in crimes against women after the implementation of MGNREGA. The results suggest that MGNREGA economically benefited women as it helped them become independent bread earners. However, this came at the cost of increased violence against women. Majority of the women retained a part of their MGNREGA wages and were able to meet their personal needs. The gender wage gap also reduced because of the implementation of the scheme. MGNREGA also increased female participation in gram sabha meetings, which increased their role in the grassroot level of the Indian democracy. Female participation also increased the number of bank accounts in the woman's name. Despite all the benefits, MGNREGA had some shortcomings. Female participation led to them being emotionally strained for leaving their children at home. Other than dowry deaths, crimes against women also increased post the implementation of MGNREGA.

What were the Indirect Effects of MGNREGA?

This section looks at two papers that research the indirect impacts of the program on the education of children and on poverty in rural India.

The paper by Afridi, Mukhopadhyay and Sahoo (2016) aims to find exogenous shifts in mothers' labour force participation and its impact on their children's education by researching the implementation of MGNREGA. The study is focused on Andhra Pradesh (AP). Data from the child and household level panel for 2007 and 2009-10 from the Young Lives Study (YLS) is used. The sample is limited to children between the ages of 5 to 15 years, the school-going age group, in 2007. Only children from households living in rural areas in both the periods were used. Children from households that moved from rural to urban areas between the 2 rounds, and children that were not available for the second round were dropped, making attrition

negligible. Children that had some missing data on relevant covatories from either of the rounds were dropped. This data was used to assess the impact of female participation in the labour force on three educational outcomes of their children - time spent in school, enrollment, and grade attainment. The temporal, sub-district level variation in MGNREGA implementation was exploited to identify exogenous shifts in female labour force participation. The identification strategy included the utilization of a lagged amount of funds allocated for MGNREGA implementation and lagged rainfall shocks.

The results show that if the mother worked, her child's time spent in school would go up by 0.293 hours a day. This shows that the mother's household work and chores were not carried out by the children, and assuming that no other child care services were available, the children were sent to school, resulting in them spending more time there. The mother working increases the probability of her child being enrolled in school by 47.2 percentage points. However, the 2 unrelated factors that could account for that change are that the children who are 5 years old that were not enrolled in school at the baseline may have enrolled in a primary school when they got older. Additionally, children in the older cohort at the baseline may have dropped out of school over time. The gap between a child's actual grade and ideal grade reduced by 40.6 percentage points as a result of mother's work participation. This shows that the women's labour force participation led to a concomitant improvement in the educational attainment of their children. Analysis of the data suggests that mothers' participation in the workforce increased the share of total expenditure on education by 3.8 percentage points. This shows that the women had a greater say over where the money was spent and their bargaining power and decision making abilities within their household increased.

The paper by Ravi and Engler (2009) analyses the impact of MGNREGA on food security, savings and health outcomes of rural households. The study uses data from an initial baseline

survey of 1066 households in June 2007 and data from a subsequent panel of 320 households in December 2008 from the Medak District of Andhra Pradesh. MGNREGA had been implemented in these villages 12 months before the survey was taken. The authors used propensity score matching, double difference and triple difference to account for non-random attrition and to estimate the results.

The household samples were selected based on criteria that they qualified as ultra poor (households with less than one acre of land, no male earning member and no access to microfinance). The authors took the weighted average of outcomes of non-participants in MGNREGA who were similar to the program participants in terms of the propensity score $P(X) = Prob(D = 1|X)$. D represents participation in the program. It would be by 1 if an individual participated in MGNREGA, and 0 otherwise. This estimated the probability of being in the treatment group, which enabled the comparison of people likely to get MGNREGA implementation from the treatment and control groups. Next, data from the follow up survey of 320 households in 2008 was used to correct for the unobservable bias (time variant) through difference in difference methods.

However, as the MGNREGA had already been implemented for a year when the first survey took place, the comparison between participants and non participants estimated and tracked the differences in the outcomes after implementation. The data used prevented the authors from estimating and finding results for the impact of the scheme before and after its introduction.

The people in the districts were classified as stayers (those who were part of MGNREGA across both the surveys), new joiners (those who joined after the first survey), voluntary leavers (those who left after the first survey), voluntary non-participants (those who chose to stay out of MGNREGA) and involuntary non-participants (those who demanded MGNREGA but did not get

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work due to exogenous reasons). Impacts of the program were seen by comparing new joiners to long term participants, new joiners to involuntary non participants and voluntary leavers to voluntary non participants.

The results suggest that participation in MGNREGA increased the workers' consumption by Rs.25 or 6% of the income prior to intervention of the program. This increase was most distinctive for non-food consumables, where the expenditure rose by 40%. Spending on clothing and food increased by 11% and 7% respectively. Participants were able to reduce the amount they spent on transportation by 18% which suggests that MGNREGA effectively provided work close to their house. This is consistent with the scheme provision of providing work 5 kms around the workers' houses.

Participants (68%) were more likely to save money compared to the non participants (58%). However, the actual amount saved did not differ significantly. The scheme led to poverty among the participants falling from 23% to 16%. The stayers saw the least growth in consumption, whereas the leavers had the highest increase in consumption. This is because the stayers in the 2008 survey included MGNREGA participants from the weakest section of the population that were unable to leave the program. On the other hand, the leavers dropped out of the scheme as soon as better work opportunities arose. The non-participants in the 2008 survey performed above average as the non-participants included the MGNREGA leavers that had above average performance. Based on this, we can assume that the leavers were inherently different, and that their inclusion in the survey skewed the results. The leavers surpassed the non-participants' consumption by 17%. Leavers seemed to have performed the best. 27% of the participants reported an improvement in their health, compared to 21% of non participants.

The 2 papers above investigate the indirect effects of MGNREGA implementation on the education of the female participant's children and on poverty. The results from the paper by Afridi, Mukhopadhyay and Sahoo (2016) suggest that female participation in MGNREGA led to an increase in the educational spending and grades of their children. The paper by Ravi and Engler (2009) shows that the program led to an increase in spending, expenditure and savings of participants. The leavers of the program between the first and second survey fared the best as they left when better opportunities arose. MGNREGA also led to reduction in poverty among the participants of the program.

Conclusion

The purpose of this paper is to analyse the extent to which the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA) impacted women in rural areas. Researching this question is of personal interest to me due to my work in promoting and researching ways to provide employment to women in Mumbai slums with the NGO Myna Mahila. This paper helped me understand what aspects and factors need to be considered when providing employment to women.

This paper looks at three kinds of impacts of MGNREGA - impacts on the labour market, female empowerment and indirect effects. The labour force effects suggest that the program did not result in crowding out of private employment (Zimmermann 2012). On the other hand, MGNREGA acted as a safety net for people that motivated people to take more risks as the scheme provided them with a way to earn back up income. This encouraged them to switch from private sector employment to family employment and take more agricultural risks like growing riskier cash crops which had a higher expected return (Zimmermann 2020).

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Participation in the scheme was very beneficial for women. The results suggest that the program had more benefits for women compared to men and SC/STs. The scheme resulted in higher wages for women and reduced the gender pay gap. The wages for female casual workers increased by 8%, while the wages for male casual workers increased only by 3.8%. The probability of women being employed in public works increased by 4 percentage points (Azam and Mehtabul 2012). Using the MGNREGA income, women were able to meet their own needs and their bargaining power in their house increased. The results showed that 80.6% of the women retained a part of their income, and the scheme led to a 16 to 35.5% increase of bank accounts under the woman's name (Pankaj and Tankha 2010). Female empowerment as a result of MGNREGA also encouraged women to participate in their respective gram panchayats, at the grass root level of Indian democracy. One negative effect the scheme had on women is that violence against women increased. This violence involves rape, domestic violence, kidnapping, molestation and sexual harassment, while the dowry deaths decreased. Total violence against women increased by 10.4 percentage points (Amaral, Bandyopadhyay, et al 2015).

MGNREGA indirectly impacted the education of children and poverty. The program led to an 3.8 percentage point increase in the educational spending for female participants' children. This was complemented with an increase in the time the children spent in school by 0.293 hours a day as well as an increase in their grades. The gap between the children's actual and ideal grade reduced by 40.6 percentage points. Additionally, the consumption done by participants increased by 6% (Afridi, Mukhopadhyay, et al 2016). Participants in the program were also more likely to save money compared to the non-participants. The poverty level of the participants reduced from 23% to 16% (Ravi and Engler 2009).

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While the scheme had numerous positive effects on different aspects of rural society, there were some drawbacks in its implementation. According to the paper by Dey (2010), the lack of awareness and illiteracy among the rural poor resulted in most workers not being aware of their rights like guaranteed employment within 15 days and unemployment benefits when work was not provided on time. Many workers faced a long delay in wages. The act entitled the workers to payment within 15 days; however, they were made to wait for weeks, if not months, for their wages. In many states, like Gujarat, workers did not earn the minimum wages. While MGNREGA mandated equal pay for both genders, women were often paid less than men. In some states, like Rajasthan, the women's husbands collected and controlled their MGNREGA wages. In states like Bihar and Uttar Pradesh, women were often not even allowed to work. The program worksites lacked various facilities like creches for children, drinking water and first aid kits.

Doing this research helped me realize that in order to provide employment to women in Mumbai slums through my work with the NGO Myna Mahila, the employment locations need to be close to the female's house which helps the women come to work. There also need to be provisions in place which provide child care services to the women's children which enables them to leave their house to work. After doing research on MGNREGA, I learnt that the wages that many rural women earned were collected by a male member of their family and they did not have access to it. Based on this information, I will try to make sure that the salary that women earn from the employment Myna Mahila provides is directly transferred into their personal bank account.

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