RESEARCH IDEA AND PROPOSED INTERVENTION

Research Question: Does proactively creating and promoting "non-traditional" MGNREGA works that are more attractive to women reduce their rate of seasonal distress migration in Southern Rajasthan?

Novelty: Most studies on MGNREGA and migration look at overall workdays or wages. This focuses on the type of work as a key determinant of female participation. It tests whether making worksites more empowering and skill-building can change migration decisions. It also explicitly ties the intervention to local political incentives (re-election).

Proposed Intervention:

- Treatment: In treatment gram panchayats (GPs), a local NGO (partnering with the research team) will conduct a participatory planning meeting with the GP officials, provide facilitation support to the GP to get these projects technically approved by the Block office and emphasize the re-election incentive.
- Control: Control GPs will continue with business-as-usual MGNREGA implementation.

UNIT OF RANDOMIZATION AND EXPERIMENTAL ARMS

Population of Interest: Women of working age (18-60 years) in rural gram panchayats of Southern Rajasthan with historically high rates of female seasonal migration.

Unit of Randomization: The Gram Panchayat (GP)

Experimental Arms:

- Treatment group: GPs that receive the full intervention (participatory planning + facilitation + information campaign + re-election incentive messaging).
- Control group: GPs that receive no intervention from the research team.

Ethical Concerns:

1. Withholding a potentially beneficial intervention from the control group.
2. Creating friction with local officials in control of GPs.
3. Ensuring women's voluntary participation in the new works.

ESTIMATION STRATEGY

In a perfect world, we can estimate the Average Treatment Effect(ATE) but that would be unethical since we cannot force women to work on the new sites and forbid others.

In the real world, there is non-compliance. So by doing RCT we cannot control the ultimate action but only control the opportunity by randomizing at GP level.

PRIMARY ESTIMATION → Intent to Treat(ITT)	SECONDARY ESTIMATION→Treatment on Treated(Tot)
Compares outcomes of *all* individuals in Treatment GPs vs. *all* in Control GPs. Estimates the real-world effect of offering the program to a GP. Regression eq: $Yi = \alpha + \beta * Zg + \delta * Xi + \varepsilon i$ Where, Yi - is the binary outcome variable for an individual woman i. α - is the estimated baseline migration rate for women in the control group. Zg - is a binary indicator variable for the random assignment of the gram panchayat (GP) g that woman i lives in. β - is the Intent-to-Treat effect. It is the causal effect of being randomly assigned to a treatment GP on the probability of migration. $\delta * Xi$ - Xi is a vector of predetermined baseline characteristics for woman i. δ is the corresponding vector of coefficients for these variables.	Estimates the effect for compliers—women who worked because of the program. Uses random assignment (Zg) as an instrument for actual work (Di) First stage: $Di = Y0 + Y1 * Zg + Ui$ Where, Di - 1, if women worked on a new site and 0 otherwise. $Y1 * Zg$ - The first stage effect. It answers if the program actually got people to work on the new site or not and Zg is the instrument. Calculation, Treatment group: `P(D=1 | Z=1)` Control group: `P(D=1 | Z=0)` $Y1$ = `P(D=1 | Z=1) - P(D=1 | Z=0)` Interpretation: A positive/negative $Y1$ shows women's probability of working on a new site.

	Second stage: $Yi = \alpha + \beta * \widehat{Di} + \varepsilon i$ Where, $\beta * \widehat{Di}$ - $\widehat{Di}$ It is the predicted value of Di from the first stage regression. And β is the Tot effect of actually working on a new MGNREGA site on the probability of migration, but *only for the subpopulation of compilers*. Calculation, $\beta^{IV} = ITT \ / \ Difference \ in \ take \ up$ Where, β^{IV} is the Tot effect of actually working on the new MGNREGA sites. Interpretation: If Tot effect comes out to be larger then it is because ITT is diluted by non-compliers in the treatment group. And Tot effect zooms in on the group that was actually reached out by the program.

Crucial Assumptions and Caveats:

1. Relevance - The instrument (Zg) must affect the treatment (Di).
2. Exclusion Restriction - The instrument (Zg) must affect the outcome (Yi) only through its effect on the treatment (Di). BUT this can get violated because of spillover effects or political incentives.
3. Monotonicity - There are no "defiers". No woman who would actively avoid the new worksites if assigned to treatment but would have worked on them if assigned to control. This is usually plausible.

HETEROGENEITY ANALYSIS

Here, we are asking if the program worked better for some groups than for others.
Estimation Eq: $Yi = \alpha + \beta1 * Zg + \beta2(Zg * Si) + \beta3 * Si + \delta * Xi + \varepsilon i$

Where,
β1 - For women with land, assignment to a treatment GP reduced the probability of migration by β1 percentage points.

β2 (The Interaction term) - The effect of the treatment program was β2 percentage points stronger for landless women than for women with land.

β3 - Tell us the difference in migration rates between landless and land owning women in villages that did not receive the program.

Dimensions: Landownership, Caste/Tribe, Age and Education, Baseline migration prevalence.

POTENTIAL THREATS TO VALIDITY

THREAT	RELEVANCE & DETECTION	MITIGATION
Spillover	<u>Yes</u> If women from the control GP go to work in treatment GP.	- By checking endline data. - Mapping GPs and controlling adjacently located GPs to treatment GPs.
Attrition	<u>Very High</u> If the whole household migrates and the location is not found at the endline.	- Compare baselines of attritors vs. non-attritors. - Using Lee Bounds to test how robust your results are to extreme assumptions about the missing data. 1. Upper Bound - most conservative 2. Lower Bound - most optimistic **Interpretation:** If both the bounds are negative and significant, robust to attrition.