Expected Benefits and Costs of Migration for Rural Youth: Experimental Evidence from India

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EEA
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Motivation

- Misallocation of labor across space is an important factor behind differences in income per capita across countries with large negative effects on aggregate productivity. (Gollin et al., 2014; Bryan and Morten, 2019)

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- Low migration from rural to urban areas could stem from:
  - Higher skill requirements in urban jobs (Lagakos and Waugh, 2013; Young, 2013)
  - Credit or insurance constraints (Bryan et al., 2014; Munshi and Rosenzweig, 2016)
  - Lack of information about jobs (McKenzie et al., 2013; Baseler, 2021)
  - Non-monetary costs of migration (Lagakos et al., 2018; Imbert and Papp, 2020)
- Difficult to disentangle these factors as they jointly determine migration decisions.

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  - We experimentally adjust expectations of candidates about job location and wages.
- Non-monetary costs of migration **[quantify this]**
  - We use experimental change in beliefs to analyze how prospective trainees weigh up job location and salary in their decision to enroll in the program.

In this paper: what we find

- The survey suggests that the average candidate holds overoptimistic expectations about placement job:
  - Location: expect 55% of jobs to be in their home state (the truth is 20%).
  - Salary: expect an 18% higher salary than what the program provides.
- Our information intervention is partially successful in aligning potential trainees' beliefs with observed averages.

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- Our information intervention is partially successful in aligning potential trainees' beliefs with observed averages.
- Matching the survey sample with administrative data on enrollment, we find that the treated respondents are less likely to take part in the program.
- Our estimates suggest that job seekers need to be paid double to work outside of their home state.

Roadmap

Context

- DDUGKY program is a residential training and placement program:
  - focuses on rural youth aged 15-35 years (mandatory coverage of females and socially disadvantaged groups),
  - shifts the emphasis from training to training and placement (mandatory placement of at least 70% candidates to receive training funds),
  - covers all the costs for training, including accommodation and food.

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- We collaborate with the Bihar government and attend mobilization camps organized across multiple districts b/w December 2019 and February 2020.

- Survey 876 candidates from 63 mobilization camps. Summary statistics of sample:
  - Average age was 20 with 58% females,
  - 30% candidates come from SC/ST background; 55% are OBCs,
  - Initial probability to join: 80%,
  - 74% of the camps were attended by the training provider mobilizer.
  - All camps had the presence of a government official.

Mobilisation Camp

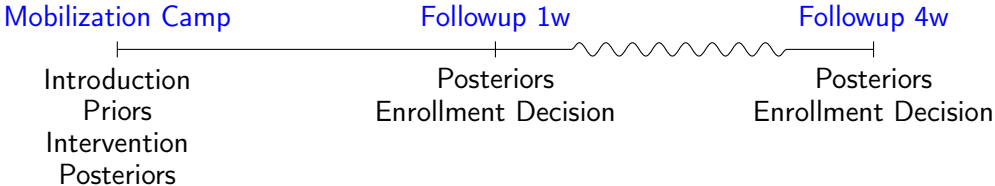
Context

- From qualitative interviews, we identified that potential trainees are misinformed about two important aspects of job opportunities:
  1. the wages offered
  2. location of job (inside or outside the state).
- Incorrect expectations could step from the training providers' mobilizer or the government officials or both:
  - incentives are aligned towards maximizing the # of candidates enrolled.
- Hypothesis: lack of truthful information about labor market opportunities has a direct and long-term effect on training completion, job retention and migration outside of the state.

Roadmap

Data Collection

- Overview:



- Followup surveys happen over the phone, 1 week and 4 weeks after the baseline surveys are conducted in the mobilization camps.

- Enrollment in the training program:
  - Self-declared via follow-up surveys
  - Match survey data with administrative data on training enrollment.

Labor Market Beliefs and the Intervention

- Labor Market Beliefs:
  - Location: After the training if 10 people like you get a job. How many will get a job inside of Bihar, and how many will get a job outside of Bihar?
  - Salary: After the training if 10 people like you get job. How many will get a job with a monthly salary of less than Rs 6000? between Rs 6000 and Rs 8000? between Rs 8000 and Rs 10000? between Rs 10000 and Rs 12000, and how many will get a job above Rs 12000?

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- Candidates are randomized (within the baseline survey) into 1 of the 4 groups:
  - Control: basic information video
  - Treatment Salary: basic information video + true distribution of salary
  - Treatment Location: basic information video + true distribution of location
  - Treatment Salary and Location: combined

- Interventions (tailored to the gender of candidate) provide true labor market distributions in a similar way. ‣ Video Snippet Location ‣ Video Snippet Salary

Empirical Framework (Labor Market Beliefs)

$$Posterior_{ic}^{j} - Prior_{ic}^{j} = \gamma^{j} T_{ic}^{j} + X_{ic}'\alpha + \delta_{c} + \varepsilon_{ic}, \qquad j \in \{s, l\}$$

- Individual i present at the mobilization camp c.
- $Prior_{ic}^{j}$ and $Posterior_{ic}^{j}$ measures the respondent i's beliefs for salary ($j = s$) and location of job ($j = l$) at the end of training program.
  - Location beliefs: number of candidates out of 10 outside Bihar.
  - Salary beliefs: average salary at the end of training.
- Post-double-selection lasso for the control variable selection (Belloni et al., 2014).
- Standard errors are clustered at the mobilization camp level.

Empirical Framework (Enrollment in Training Program)

- 2SLS estimation procedure with labor market beliefs instrumented using treatment assignment.
- First stage:

$$\begin{aligned} Posterior_{ic}^{j} - Prior_{ic}^{j} = {} & \beta_1^l T_{ic}^l + \beta_2^l (Signal^l - Prior_{ic}^l) + \beta_3^l (Signal^l - Prior_{ic}^l) \times T_{ic}^l \\ & + \beta_1^s T_{ic}^s + \beta_2^s (Signal^s - Prior_{ic}^s) + \beta_3^s (Signal^s - Prior_{ic}^s) \times T_{ic}^s \\ & + X_{ic}' \alpha + \delta_c + \varepsilon_{ic} \quad j \in \{l, s\} \end{aligned}$$

- Second stage:

$$\begin{aligned} I(Enrollment)_{ic}^{Posterior} - P(Enrollment)_{ic}^{Prior} = {} & \beta_l (Posterior_{ic}^l - Prior_{ic}^l) \\ & + \beta_s (Posterior_{ic}^s - Prior_{ic}^s) + X_{ic}' \alpha + \delta_c + \varepsilon_{ic} \end{aligned}$$

Identification Assumptions

1. Statistical independence ▸ Table
   - randomization of treatment units across individuals.
2. SUTVA ▸ Table
   - find no spillover across treatment units.
3. Compliance ▸ Table
   - no non-compliance across treatment units.
4. Attrition ▸ Table
   - attrition in both follow-up rounds is low (almost 6%) and similar across all treatment and control groups.

Roadmap

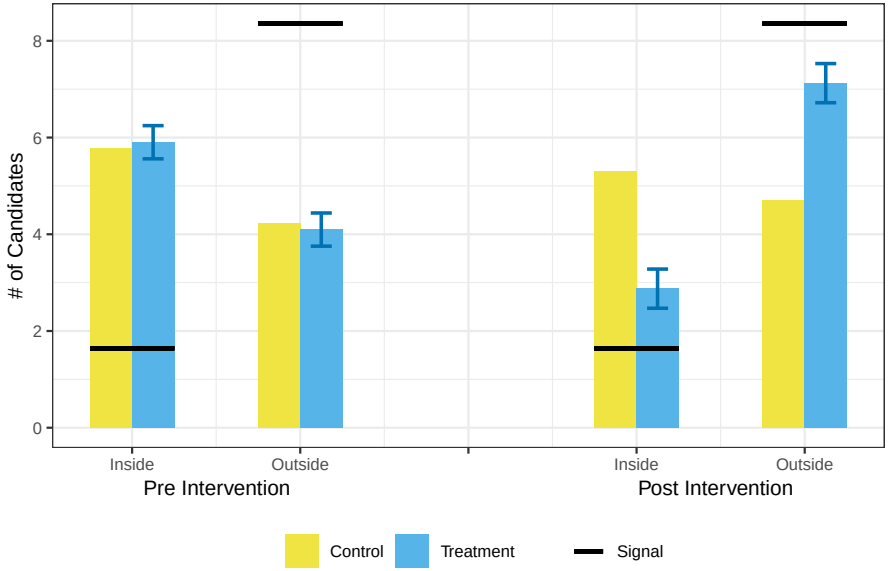
Context

Research Design

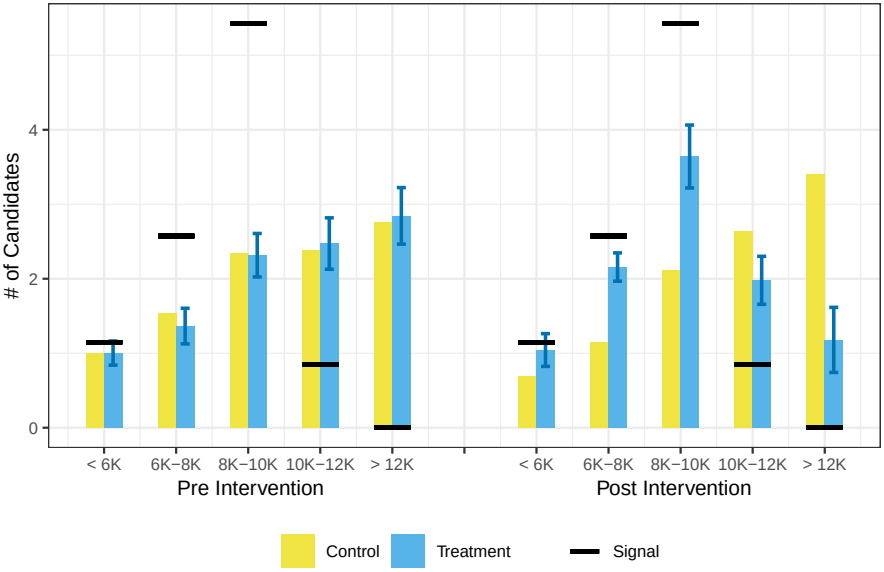
Results

Conclusion

Labor Market Beliefs on Location



Labor Market Beliefs on Salary



Effect of Treatment on Labor Market Beliefs

	Posterior − Prior		
	Baseline Posterior	Followup 1w	Followup 4w
	(1)	(2)	(3)
Panel A: Location (Candidates Outside State)			
Location Treatment	2.495***	1.276***	1.228***
	(0.223)	(0.221)	(0.254)
Mean DV [Control]	0.474	0.890	0.812
Prior [Control]	4.227	4.291	4.215
Panel B: Salary (Earnings Distribution Mean)			
Salary Treatment	-1.463***	-0.655***	-0.633***
	(0.125)	(0.132)	(0.129)
Mean DV [Control]	0.506	0.001	0.117
Prior [Control]	9.873	9.856	9.886
# of Camps	63	62	63
Camp FE	Yes	Yes	Yes
Observations	876	823	826

Results Discussion

- Information intervention is partially successful in making individuals update average labor market beliefs of the program.
- **Does the intervention affect personal labor market beliefs?**
  - personal beliefs might be different from average program beliefs.
- Survey asks:
  - Expectations: Do you expect to live outside of home state after 1 year *if you participate* in the program? How much do you expect to earn *with the training program* after 1 year?
  - Counterfactuals: Do you expect to live outside of home state after 1 year *if you do not participate* in the program? How much do you expect to earn *without the training program* after 1 year?

Effect of Treatment on Own Location Expectations (1 year later)

	Posterior		
	(1) Baseline Posterior	(2) Followup 1w	(3) Followup 4w
Panel A: Respondent Outside of State if Completes Training			
Location Treatment	0.072**	0.096***	0.097***
	(0.028)	(0.032)	(0.032)
Mean DV [Control]	0.337	0.396	0.376
Panel B: Respondent Outside of State if Does Not Complete Training			
Location Treatment	-0.010	-0.016	0.013
	(0.018)	(0.020)	(0.019)
Mean DV [Control]	0.113	0.093	0.077
# of Camps	63	62	63
Camp FE	Yes	Yes	Yes
Observations	876	823	825

Effect of Treatment on Own Salary Expectations (1 year later)

	Posterior		
	(1) Baseline Posterior	(2) Followup 1w	(3) Followup 4w
Panel C: Respondent Salary if Completes Training			
Salary Treatment	-1.700***	-1.049***	-1.094***
	(0.299)	(0.316)	(0.299)
Mean DV [Control]	13.173	13.959	13.442
Panel D: Respondent Salary if Does Not Complete Training			
Salary Treatment	-0.440	-0.133	0.093
	(0.357)	(0.431)	(0.420)
Mean DV [Control]	6.358	7.470	7.128
# of Camps	63	62	63
Camp FE	Yes	Yes	Yes
Observations	876	823	825

Results Discussion

- Information intervention is partially successful in making individuals update average labor market beliefs of the program.

- Information intervention affects personal labor market expectations but not counterfactual situations.

- **Does the intervention affect enrollment into the training program?**
  ▸ First Stage

Effect of Beliefs on Training Enrollment

	Enrollment – Prob Join Prior		
	(1) Followup 1w	(2) Followup 4w	(3) Admin
Salary (Posterior – Prior)	0.021**	0.024**	0.024***
	(0.010)	(0.011)	(0.008)
Location (Posterior – Prior)	-0.007	-0.010	-0.012**
	(0.007)	(0.006)	(0.006)
Mean DV [Control]	-0.602	-0.544	-0.684
Prob Enroll Prior [Control]	0.787	0.787	0.787
Enrollment [Control]	0.187	0.238	0.103
KP F Stat	67.59	62.22	62.22
Bootstrapped Ratio Mean	-2.81	-2.55	-2.14
Bootstrapped Ratio 95% CI	[-21.76, 10.99]	[-19.17, 17.40]	[-5.77, -0.50]
# of Camps	62	63	63
Camp FE	Yes	Yes	Yes
Observations	823	826	826

Implied migration costs

Ratio of the two coefficients (salary/location)= trade-off salary and location.

- Candidates expect a salary that is twice as high for a job out of state.
- Echoes Tombe and Zhu (2019)'s finding that inter-province migration costs in China are twice as large as within-province (0.97 vs 0.45).
- DDU-GKY jobs out of state are only paid 3% higher than jobs in the state!
- Large disutility of migration explains dropout.

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Elasticity of migration costs to distance?

- Based on data from Chakravorty et al. (2023), we estimate that jobs out of state are located on average 10 times further away than jobs in the state.
- Implied elasticity of migration costs to distance of 0.2
- Higher than Bryan and Morten (2019)'s estimate for Indonesia (0.15) and an order of magnitude higher than their estimate for the US (0.02)

Monetary or non-monetary migration costs?

In the context of DDUGKY the monetary costs of migration are low.

- During training all costs are covered (accommodation, food).
- Transportation costs to placement are usually covered.
- Food provided by 27%, accommodation by 18% of employers in specific sectors (textile, hospitality, construction).
- Placement support of 1000 Rs (10% of salary) is provided for three (in-state) and six months (out-of-state).

Suggests most of the migration costs are non-monetary (Lagakos et al., 2018; Imbert and Papp, 2020).

Roadmap

Conclusion

- This paper quantifies information frictions and non-monetary migration costs in rural- urban migration decisions in India.
- Average candidate holds overoptimistic expectations about placement job:
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- Average candidate holds overoptimistic expectations about placement job:
  - Location: expect 55% of jobs to be in their home state (the truth is 20%).
  - Salary: expect an 18% higher salary than what the program provides.
- A randomized evaluation makes the individuals update their labor market beliefs and the treated individuals less likely to participate in the program, which would lead to a migration out of their home state.
- We provide direct evidence of large non-monetary migration costs in India.
- Despite over-optimism about job opportunities which tends to increase migration, substantial non-monetary costs impede it.

Appendix

Contribution to Literature

- Migration frictions and rural-urban wage gaps. (Bryan et al. 2014; Ashraf et al. 2015; Beam et al. 2016; Batista & Narciso 2018; Lagakos et al. 2018; Tombe and Zhu 2019; Imbert & Papp 2020; Meghir et al. 2022; Frohnweiler et al., 2022)
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- Experiments on migration decisions. (Baláž et al. 2016; Bah and Batista 2018; Lagakos et al. 2018; Shrestha 2020; Batista & McKenzie 2021; Bazzi et al. 2021)
  - Precisely identifying preferences; real enrolment decision rather than intentions.

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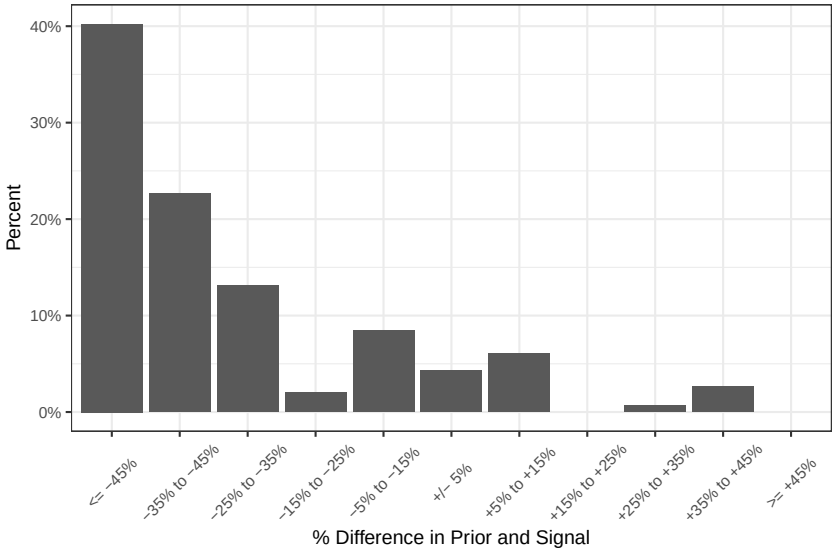
- Job search frictions and youth unemployment. (Blattman and Ralston 2015; McKenzie 2017; Abebe et al. 2017; Franklin 2018; Altmann et al. 2018; Belot et al. 2019, 2021; Alfonsi et al, 2020; Bassi and Nansamba 2022; Banerjee and Chiplunkar 2022; Kircher, 2022; Bandeiera et al. 2023)
  - Identify strong labor market expectations; how to manipulate them.

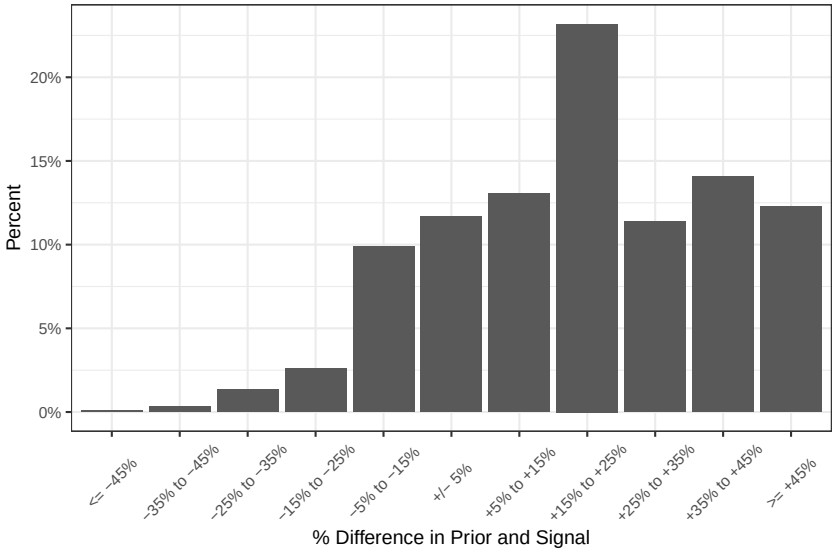
Misperceptions on Location

Mean Absolute Error: 50%



Misperceptions on Salary

Mean Absolute Error: 25%



Parallel Projects

- DDUGKY Information:
  - *Can information about jobs improve the effectiveness of vocational training? Experimental evidence from India* (Bhaskar Chakravorty, Wiji Arulampalam, Apurav Bhatiya, Clément Imbert and Roland Rathelot)

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- DDUGKY COVID:
  - *Impact of the COVID-19 Crisis on India's Rural Youth: Evidence from a Panel Survey and an Experiment* (Bhaskar Chakravorty, Apurav Bhatiya, Clément Imbert, Maximilian Lohnert, Poonam Panda and Roland Rathelot)

Parallel Projects - DDUGKY Information

- Using a randomised experiment, we show that providing better information about prospective jobs to vocational trainees can improve their placement outcomes.
- We find that including in the training two information sessions about placement opportunities make trainees 18% more likely to stay in the jobs in which they are placed.
- We argue that this effect is likely driven by improved selection into training. As a result of the intervention, trainees that are over-optimistic about placement jobs are more likely to drop out before placement.

Parallel Projects - DDUGKY COVID

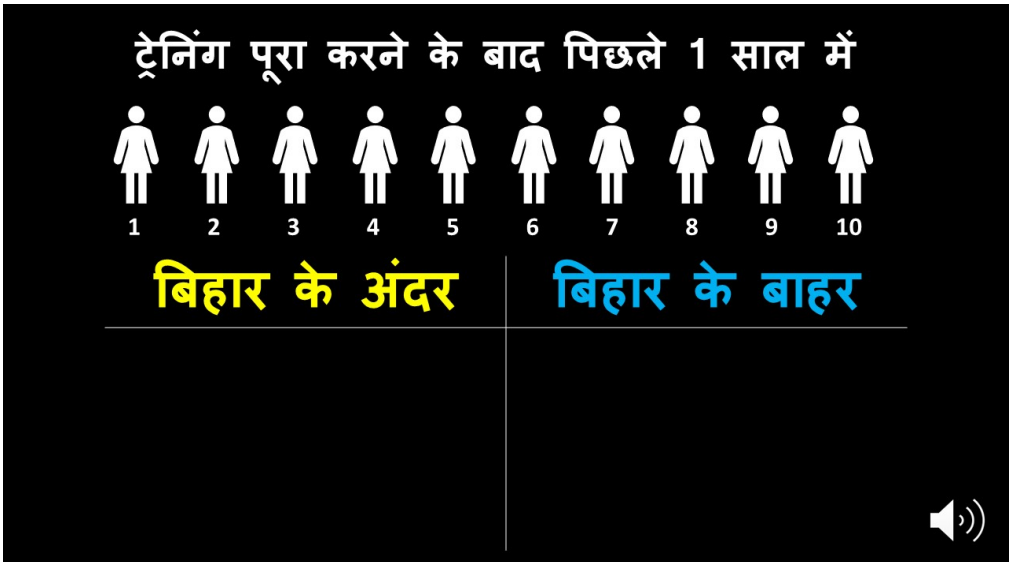
- This paper presents evidence on the short and long-term impact of the COVID-19 crisis on India's rural youth. We interviewed about 2,000 vocational trainees from Bihar and Jharkhand three times after the first national lockdown in 2020, between June 2020 and December 2021.

- We find that a third of respondents who were in salaried jobs pre-lockdown lost their jobs, and half of those who worked out of state returned home shortly after the lockdown.

- We report a stark difference between men and women: while many male workers took up informal employment, most female workers dropped out of the labor force.

- We use a randomised experiment to document the effects of a government-supported digital platform designed to provide jobs to low-skilled workers. The platform turned out to be difficult to use and publicised only a few job ads. We find no effect on job search intensity or employment.

Location Intervention Video Snippets (Female)



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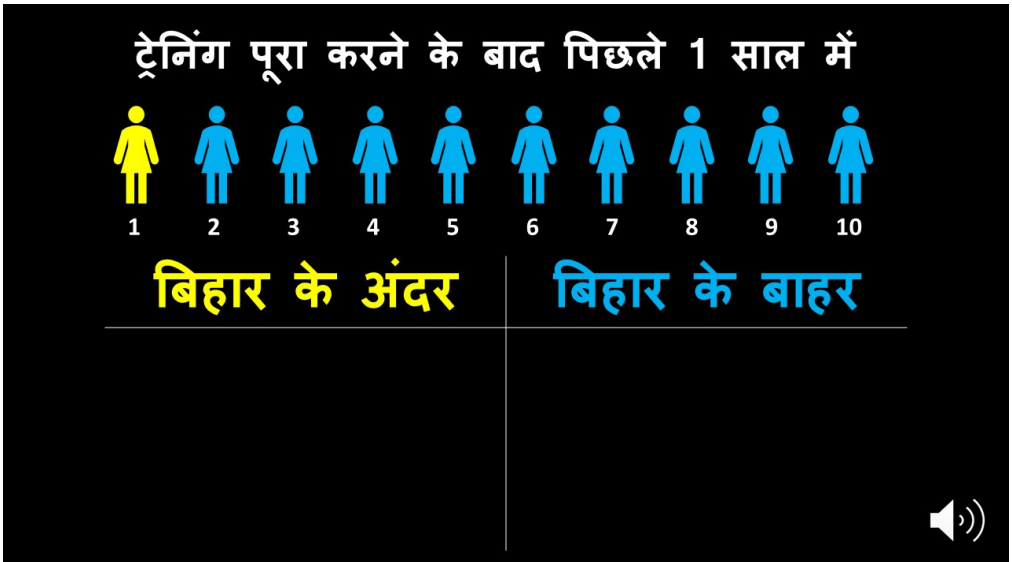

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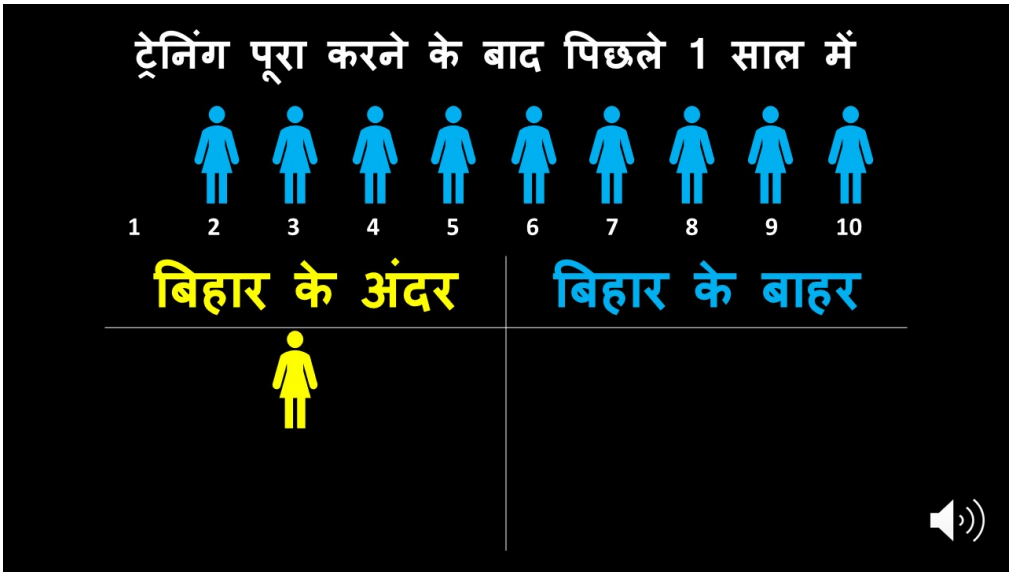

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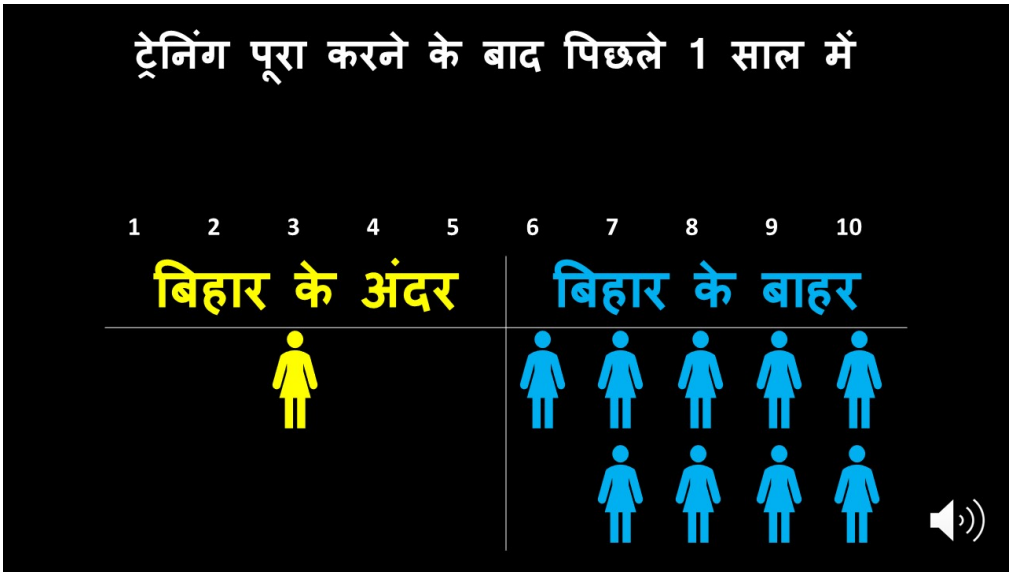

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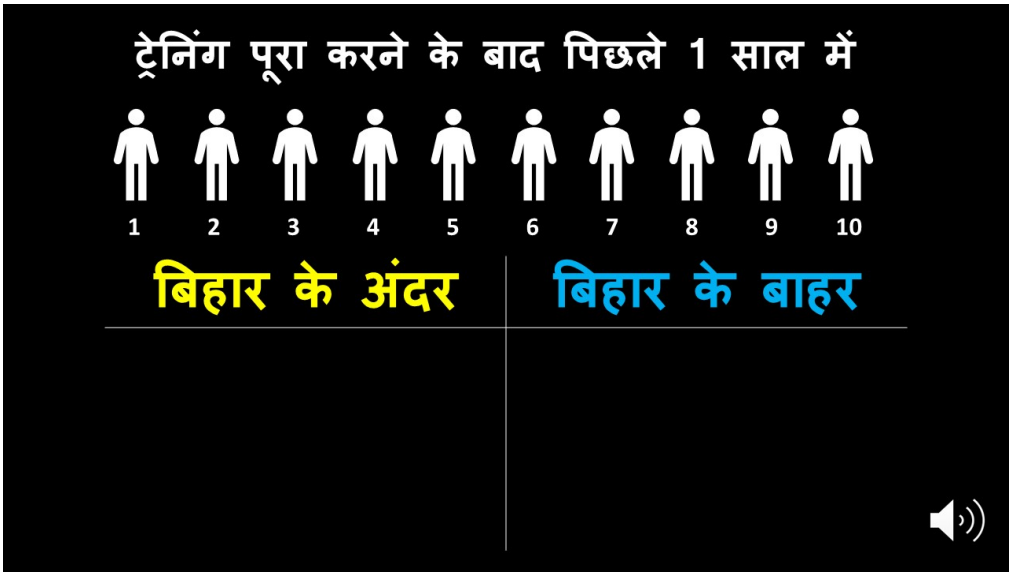

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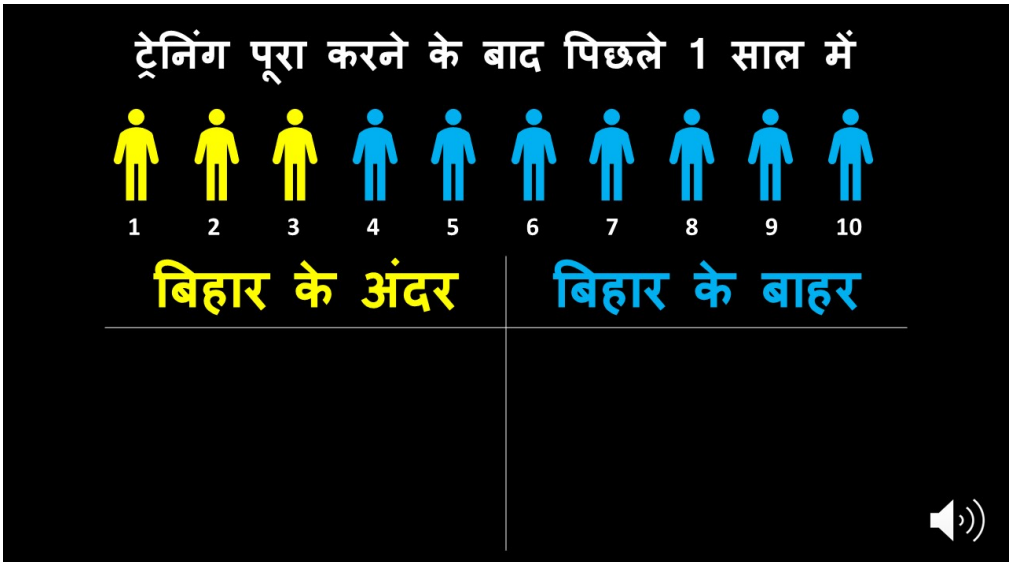

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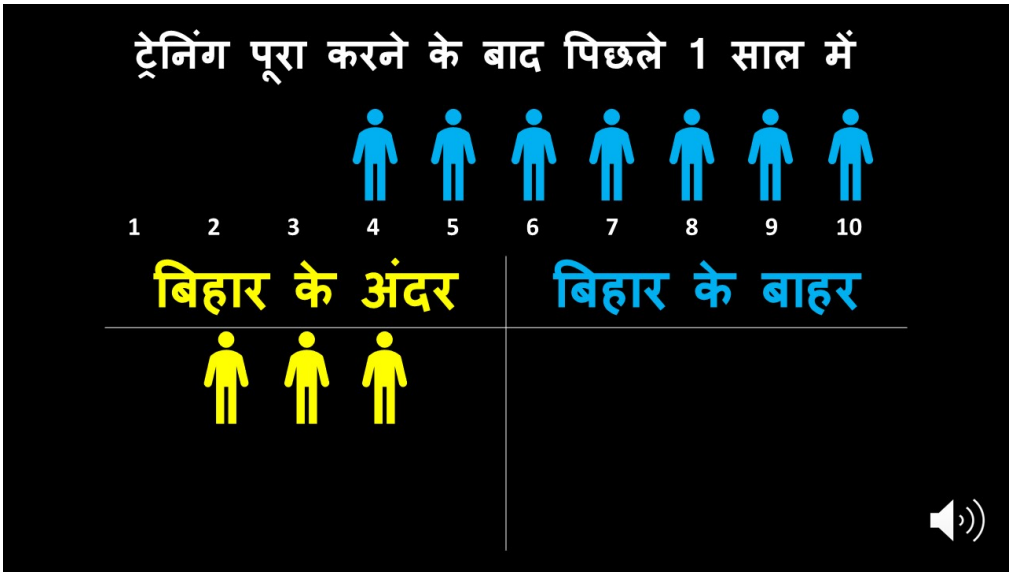

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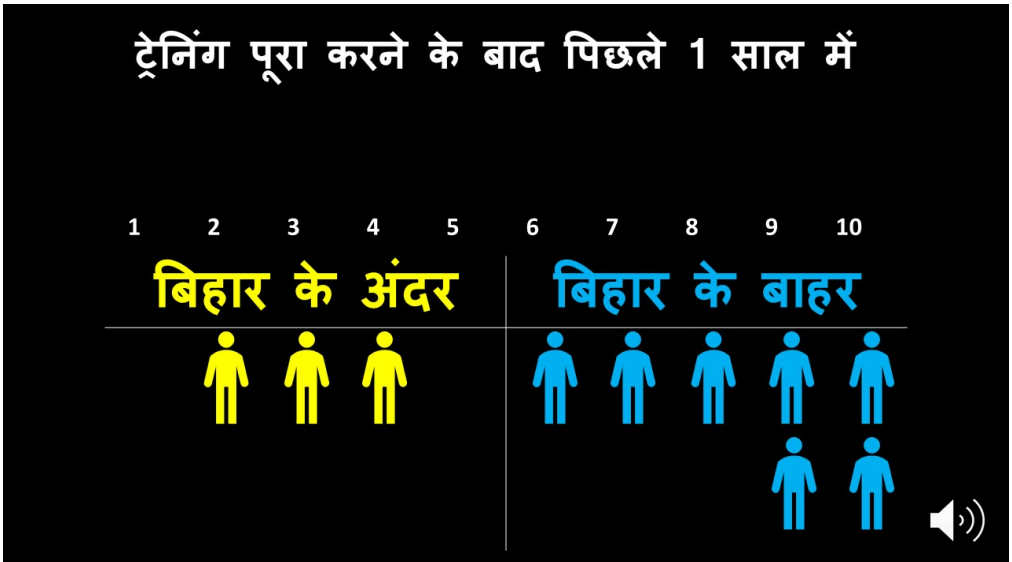

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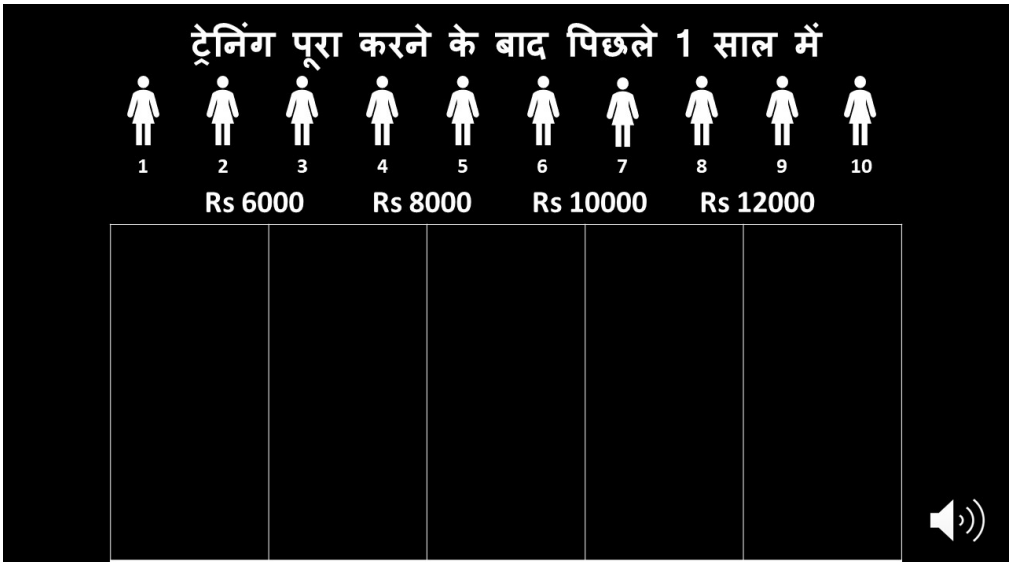

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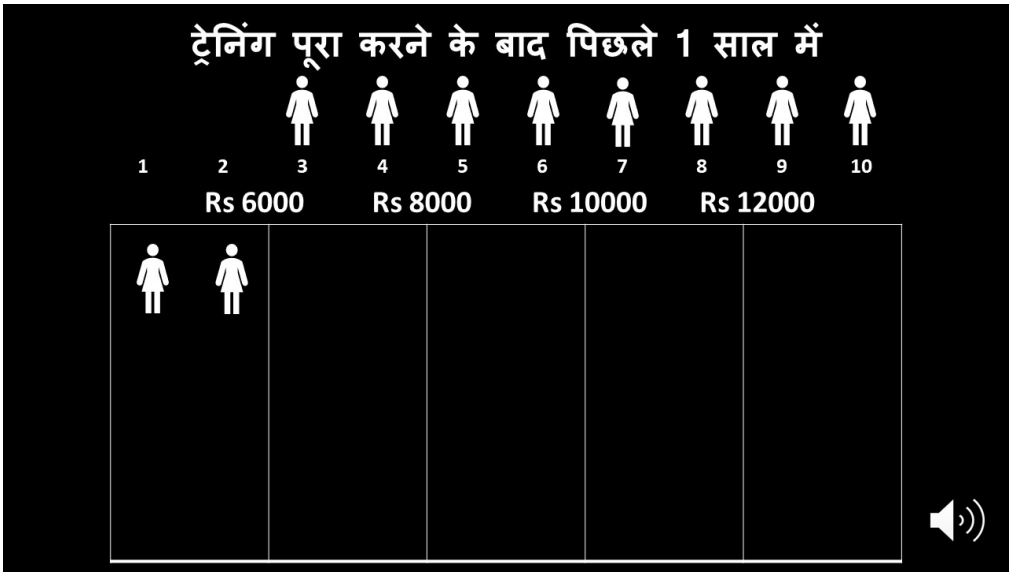

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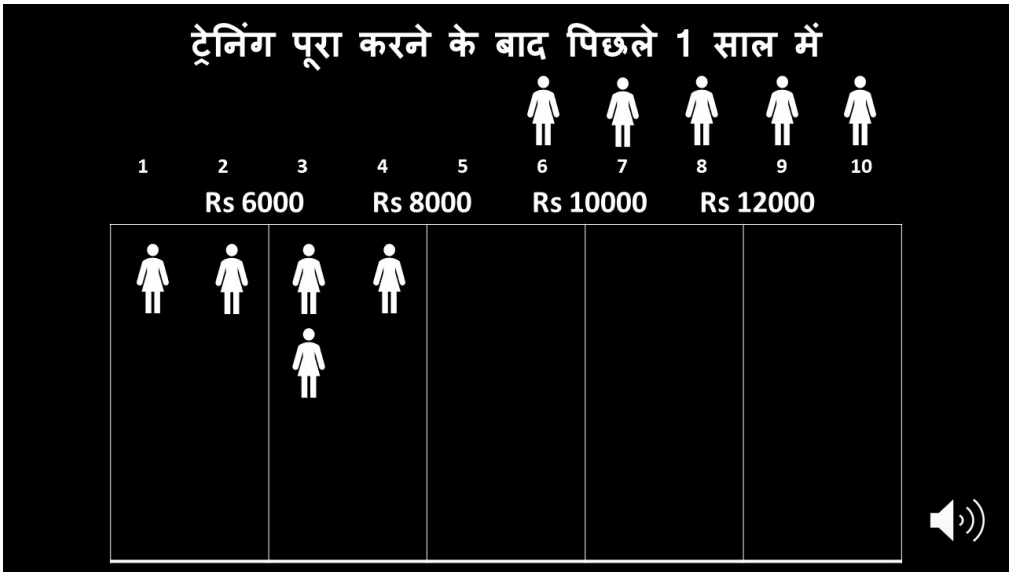

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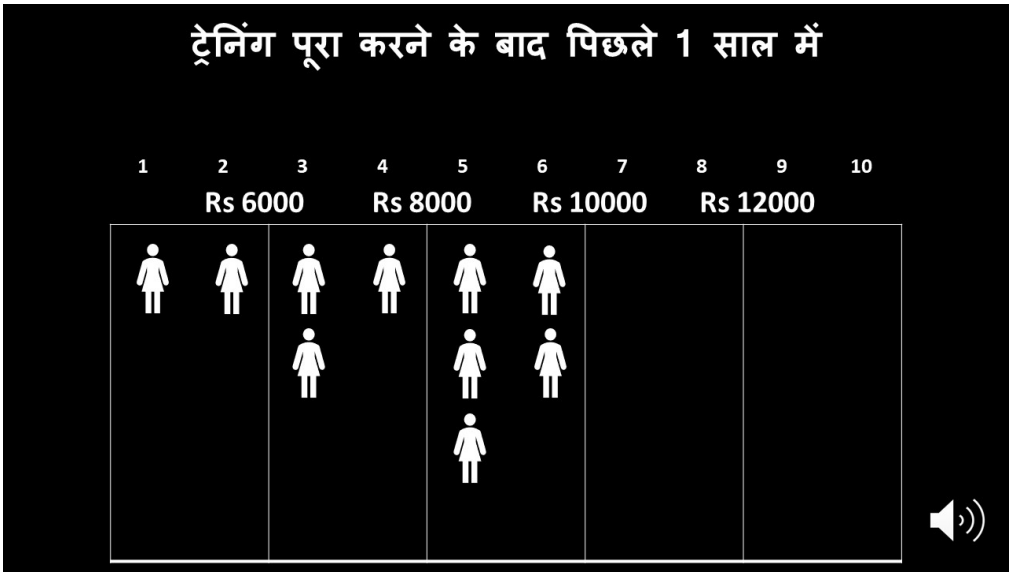
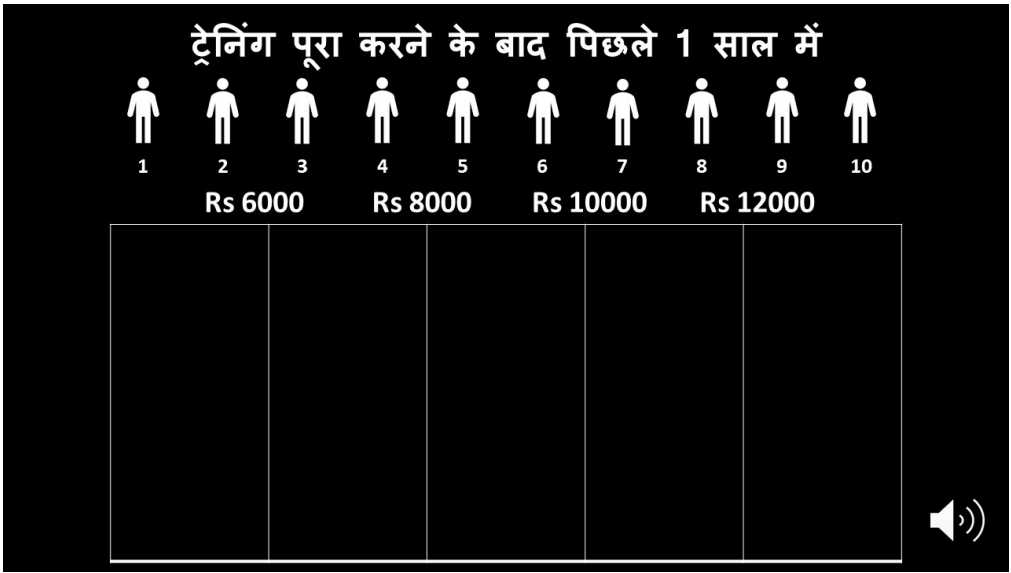
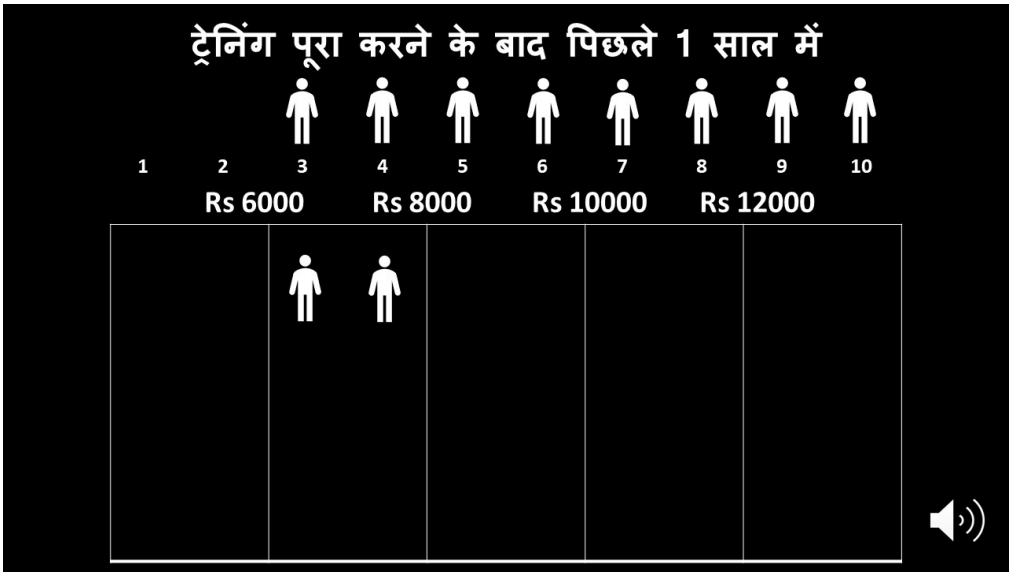


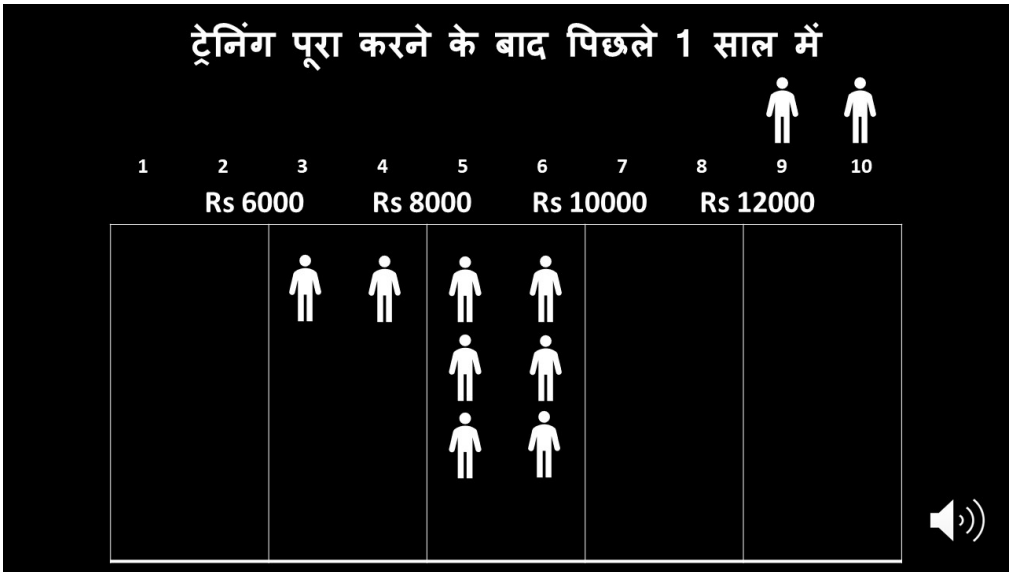
Salary Intervention Video Snippets (Male)



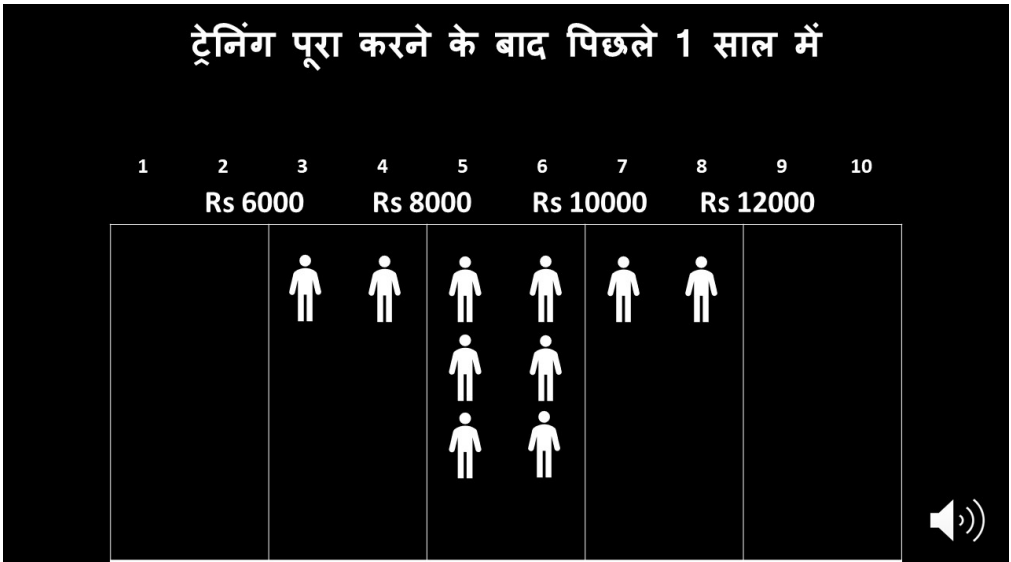
Salary Intervention Video Snippets (Male)



Salary Intervention Video Snippets (Male)



Salary Intervention Video Snippets (Male)



Balance Statistics

Variable	Control Mean	Treatment Mean			p-value		
		Salary	Location	Salary × Location			
	(1)	(2)	(3)	(4)	(2) vs (1)	(3) vs (1)	(4) vs (1)
Panel A: Socio-Demographic Variables							
Female	0.580	0.550	0.547	0.624	0.527	0.494	0.361
Age	20.31	20.47	20.42	20.47	0.624	0.749	0.626
I(Education $\geq$ Higher Secondary)	0.591	0.558	0.561	0.603	0.504	0.536	0.805
Religion: Hindu	0.927	0.939	0.924	0.926	0.634	0.884	0.946
Religion: Muslim	0.0466	0.0519	0.0314	0.0437	0.789	0.448	0.882
Religion: Prefer No Answer	0.0259	0.00866	0.0448	0.0306	0.278	0.238	0.770
Social Category: SC or ST	0.290	0.303	0.296	0.319	0.774	0.898	0.525
Social Category: OBC	0.591	0.550	0.534	0.555	0.400	0.244	0.458
Social Category: General	0.0933	0.121	0.157	0.114	0.382	0.0482	0.526
Social Category: Prefer No Answer	0.0259	0.0260	0.0135	0.0131	0.996	0.359	0.343
Panel B: Prior Labor Market Beliefs							
Location (Candidates Outside Bihar)	4.249	4.641	4.345	4.258	0.148	0.724	0.974
Salary (monthly average - Rs)	9860	9791	9684	9989	0.677	0.290	0.436
... Less than Rs 6000 per month	1	1.087	1.139	1.044	0.574	0.370	0.777
... Rs 6000 - Rs 8000 per month	1.539	1.649	1.749	1.332	0.514	0.218	0.222
... Rs 8000 - Rs 10,000 per month	2.352	2.100	2.148	2.179	0.219	0.324	0.400
... Rs 10,000 - Rs 12,000 per month	2.378	2.550	2.480	2.528	0.464	0.667	0.523
... More than Rs 12,000 per month	2.731	2.615	2.484	2.917	0.683	0.389	0.512
Difficulty to family during training [0-10]	3.352	2.861	3.552	3.341	0.158	0.570	0.973
Difficulty to family 1 year outside Bihar [0-10]	4.021	3.450	3.583	3.812	0.120	0.237	0.571
Probability to join training	0.786	0.786	0.792	0.783	0.996	0.831	0.925
Number of Observations				880			

Attrition

	Attrition	
	(1) Followup 1w	(2) Followup 4w
Location Treatment	-0.001	-0.012
	(0.025)	(0.028)
Salary Treatment	-0.011	-0.026
	(0.024)	(0.025)
Location Treatment × Salary Treatment	0.006	0.008
	(0.032)	(0.033)
Mean DV [Control]	0.062	0.067
# of Camps	63	63
Camp FE	Yes	Yes
Observations	876	876

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Spillover Effects

	Posterior − Baseline Posterior			
	Followup 1w		Followup 4w	
	(1)	(2)	(3)	(4)
Panel A: Location (Candidates Outside State)				
Location Treatment	-1.128***	-2.336***	-1.376***	-1.972***
	(0.230)	(0.643)	(0.219)	(0.669)
Share Treated		-1.803***		0.117
		(0.671)		(0.594)
Location Treatment ×		2.622**		0.853
Share Treated		(1.071)		(0.980)
Mean DV [Control]	0.407	0.407	0.464	0.464
Baseline Posterior [Control]	4.701	4.701	4.701	4.701
Panel B: Salary (Earnings Distribution Mean)				
Salary Treatment	0.755***	-1.003**	0.793***	-0.665*
	(0.106)	(0.404)	(0.122)	(0.380)
Share Treated		-0.307		-0.178
		(0.455)		(0.415)
Salary Treatment ×		0.656		0.122
Share Treated		(0.698)		(0.675)
Mean DV [Control]	-0.520	-0.520	-0.385	-0.385
Baseline Posterior [Control]	10.379	10.379	10.379	10.379
Camp FE	Yes	Yes	Yes	Yes
Observations	823	823	826	826

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Heterogeneity by Signal (First Stage Regressions)

	Posterior − Prior			
	Location		Salary	
	(1) Followup 1w	(2) Followup 4w	(3) Followup 1w	(4) Followup 4w
Location Treatment	0.439*	0.261	0.137	0.398**
	(0.251)	(0.324)	(0.147)	(0.171)
Location (Signal − Prior)	0.653***	0.595***	0.083***	0.108***
	(0.060)	(0.052)	(0.025)	(0.027)
Location (Signal − Prior) × Treatment Location	0.215***	0.236***	-0.044	-0.080**
	(0.051)	(0.063)	(0.032)	(0.039)
Salary Treatment	0.133	0.145	-0.396***	-0.258*
	(0.289)	(0.223)	(0.118)	(0.147)
Salary (Signal − Prior)	0.027	0.113	0.655***	0.636***
	(0.107)	(0.079)	(0.044)	(0.048)
Salary (Signal − Prior) × Salary Treatment	0.211*	0.110	0.137**	0.182***
	(0.124)	(0.104)	(0.055)	(0.065)
Mean DV [Control]	0.890	0.812	0.001	0.117
Prior [Control]	4.291	4.215	9.856	9.886
# of Camps	62	63	62	63
Camp FE	Yes	Yes	Yes	Yes
Observations	823	826	823	826

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Results Discussion

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  - Counterfactuals: Do you expect to live outside of home state after 1 year *if you do not participate* in the program? How much do you expect to earn *without the training program* after 1 year?

Results Discussion

- Information intervention is partially successful in making individuals update labor market beliefs of the program.
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  - Treated individuals have lower average salary expectations.
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- **Does the intervention affect enrollment into the training program?**