

# Barriers to Labor Migration for the Rural Poor: Experimental Evidence from a Vocational Training Program in Bangladesh

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## Motivation (1)

- Rural to urban migration has been an integral part of development process and economic growth (Lewis, 1954; Harris and Todaro, 1970)
- Job opportunities in the urban areas are rising (e.g., World Bank 2012) and rising wage arbitrage opportunities
- However, globally we observe low level of internal rural to urban migration by poor to job locations.
- **A puzzle: Why poor do not take advantage of these job opportunities by migrating out of the rural areas?**

## Motivation (2)

- Classes of economic models highlighting reasons for such frictions:
  - Lack of job related information
  - Lack of skills / costly skill acquisition (Caselli, and Coleman 2001)
  - Credit constraints
  - Job search cost and lacking job-related network (Heath, 2017)
  - Risk and uncertainty of migration.
- Difficult to test these economic models with observational data.
- Design a unique experiment to understand the puzzle.
  - Selected a sample of poor youth (who have the potential to migrate).
  - Experimentally relaxed some of the constraints above.
  - Estimated how much each of the constraint matters.

# Research Questions and Preview of Results

- Can skill training be effective on its own?
  - Yes, but its impact is limited.
- Can skill training be effective when other barriers are addressed?
  - Yes, positive and significant impacts on employment and household income, among others, when combined with stipend.
  - The impacts tend to be greater when further combined with internship.
  - No negative impacts on health and stress.
- Are these impacts persistent?
  - Yes, 6 and 18 months follow-up data confirmed the persistence of the impacts.

# Outline

- Background
- Study Design
- Program uptake analysis
- Treatment impact analysis
- Concluding remarks.



## Migration as a coping strategy?

- One viable strategy for these poor would be to internal migration to urban areas.
  - Possibility to have regular employment, compared to seasonal unemployment and hunger.
  - With overtime a low skilled worker can earn 5500 (70 USD).
  - Rural seasonal wage rate is 150 BDT (2 USD) per day.
- In Bangladesh, 10 million net new jobs created in non-farm sectors, between 2003 and 2013 (World Bank, 2013).
- The main contributor to these jobs is the manufacturing sector, dominated by the ready-made garment (RMG) industries.

## Ready-made Garment Industry (RMG)

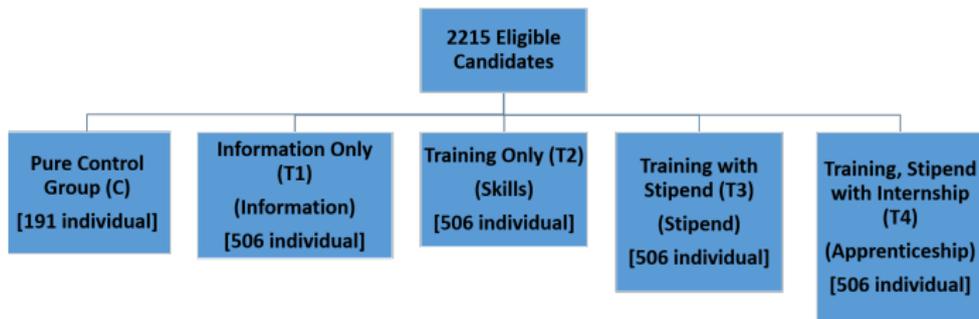


- Exports of textiles and garments are the principal source of foreign exchange earnings (about 80% of export).
- Most of the poor people in the north aren't taking advantage of the job opportunities in the RMG sector.

## Our Contributions

- Vocational training programs largely unsuccessful (McKenzie, 2017).
  - But this may be because there are constraints other than skills.
  - So, we experimentally address different constraints.
  - Adds to the studies on RCT studies on job training (e.g., Card et al., 2011; Hicks et al., 2016; Blattman et al., 2013)
- Focus on the program uptake, completion, migration, employment and welfare impact.

# Sampling



- We sampled participants from Gaibandha district who are
  - with irregular income sources and seasonally unemployed.
  - aged between 18-30.
  - willing to change their current occupation
  - from moderate to ultra poor HH (by participatory rapid appraisal).
- 2,215 eligible candidates were randomly allocated to the control (C) or one of the four treatment groups (T1-T4).

# Experimental Treatment Arms

## T1 Information (2 USD/person)

- Day-long session to disseminate information on RMG job.
- Salary, recruitment process, environment, factory condition and living standards, etc.

## T2 Info + Training (100 USD/person)

- One month-long full residential skill training (22 working days).

## T3 Info + Training + Stipend (145 USD/person)

- T2 plus stipend;
- Cover opportunity cost of training and finance migration.
- $150 \times 24 = 3600$  BDT ( $\approx 45$  USD) given for a month as stipend.

## T4 Info + Training + Stipend + Internship (185 USD/person)

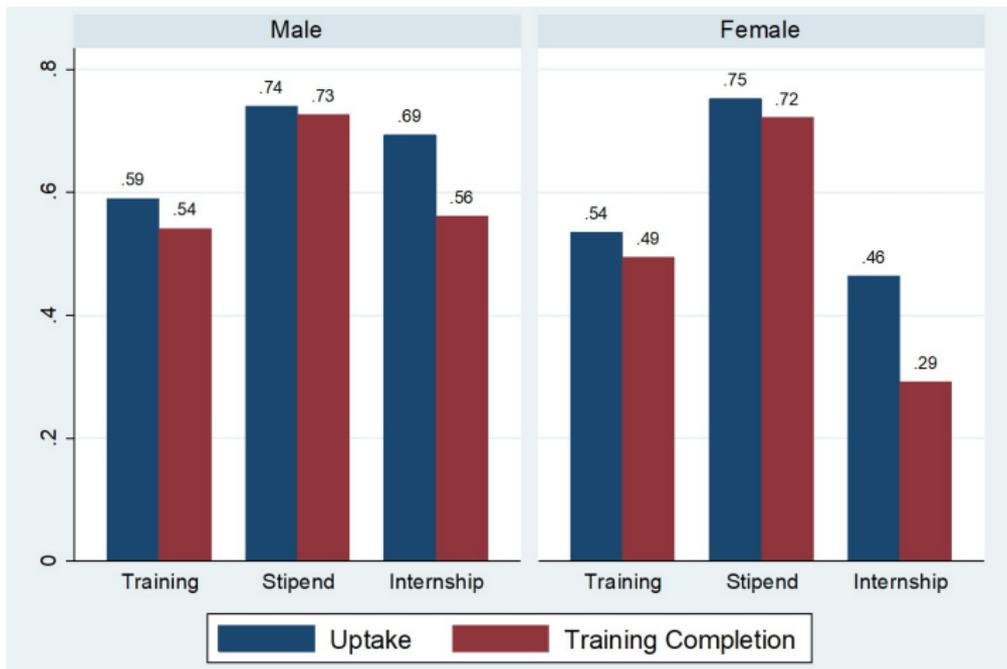
- T3 plus one-month paid internship at a garments factory located in Dhaka.



## Data

- Baseline and 6, 12, 18 months follow-up survey.
- Rural household panel survey (one year after intervention; track the households at the origin).
- Follow-up surveys conducted over phone (track the participating individual).
- Observed baseline characteristics are well balanced.
- Attrition rate is low and does not significantly differ across treatment arms.
- Information treatment has no effect on a wide range of outcomes.
- We focus on the roles of job training, stipend, and internship today.

## Treatment Uptake and Completion by Gender



- Overall uptake rate 68%. Completion rate given uptake 92%
- Low update and completion among females.

# Uptake Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Sample without control group					
Uptake (dummy)	Sample with both gender			Male	Female	
Training (T2)	-0.178*** (0.035)	-0.177*** (0.036)	-0.182*** (0.039)	-0.155*** (0.051)	-0.163*** (0.055)	-0.223*** (0.061)
Stipend (T3)	-0.002 (0.029)	-0.003 (0.029)	0.005 (0.031)	0.006 (0.039)	0.015 (0.040)	0.028 (0.055)
OJT (T4)	-0.148*** (0.031)	-0.150*** (0.032)	-0.139*** (0.035)	-0.043 (0.041)	-0.046 (0.042)	-0.281*** (0.066)
Female		-0.084** (0.035)	-0.067 (0.041)	0.013 (0.056)		
Risk-averse			0.071** (0.036)	0.071** (0.036)	0.076 (0.047)	0.055 (0.056)
Training (T2)*Female				-0.070 (0.071)		
Stipend (T3)*Female				0.001 (0.061)		
OJT (T4)*Female				-0.238*** (0.068)		
Observations	2,024	2,024	2,024	2,024	1,228	796
R-squared	0.044	0.059	0.213	0.222	0.258	0.328
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Mean of the T1 group	0.747	0.747	0.747	0.747	0.735	0.766
P-value for joint significance	0	0	0	0	0	0

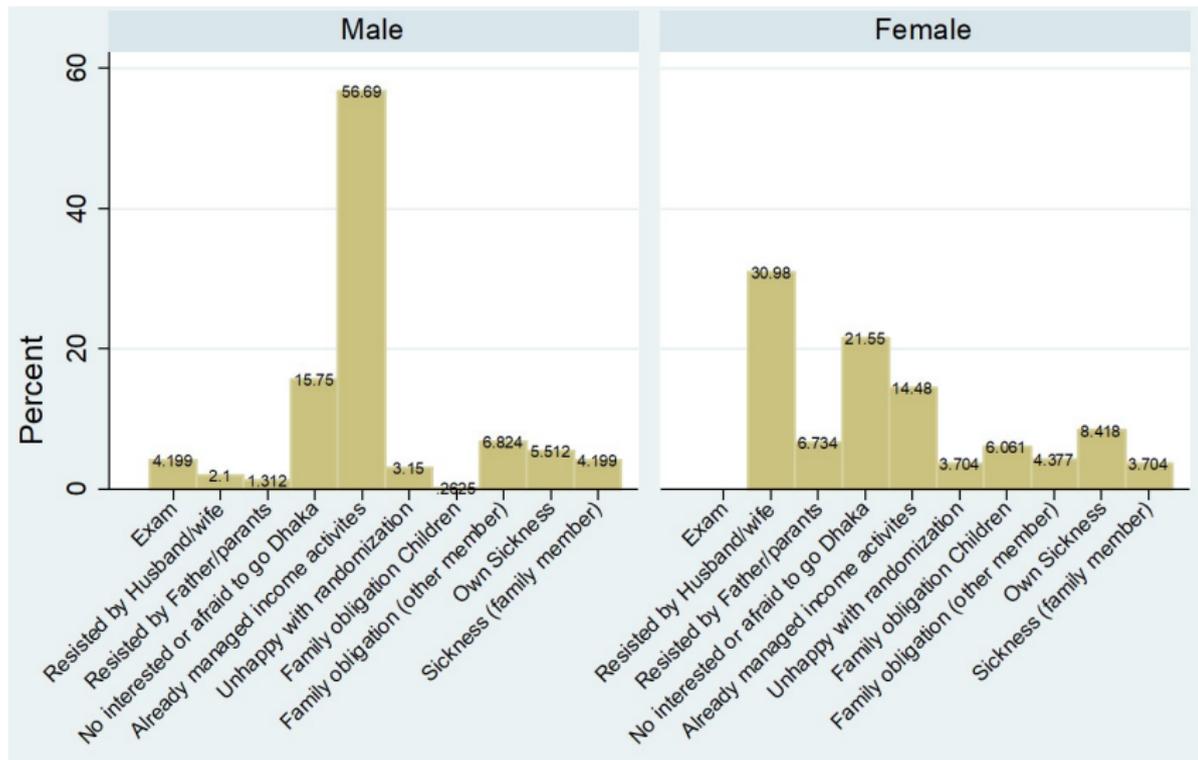
- Relative to T1 (info), T2 and T4 are less like to be taken up.
- T4 results primarily driven by females.

## Training Completion Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Sample without control and information group					
Training Completion (dummy)	Sample with both gender			Male	Female	
Stipend (T3)	0.202*** (0.036)	0.197*** (0.037)	0.203*** (0.041)	0.177*** (0.053)	0.194*** (0.058)	0.257*** (0.066)
OJT (T4)	-0.073** (0.034)	-0.073** (0.034)	-0.063* (0.038)	0.027 (0.049)	0.031 (0.054)	-0.207*** (0.052)
Female		-0.123*** (0.037)	-0.089** (0.043)	-0.036 (0.057)		
Risk-averse			0.040 (0.038)	0.043 (0.038)	0.087* (0.046)	0.030 (0.057)
Stipend (T3) * Female				0.072 (0.072)		
OJT (T4) * Female				-0.218*** (0.067)		
Observations	1,518	1,518	1,518	1,518	919	599
R-squared	0.06	0.10	0.28	0.29	0.31	0.44
Mean of the T2 group	0.52	0.52	0.52	0.52	0.54	0.77
P-value for joint significance	0.00	0.00	0.00	0.00	0.00	0.00
Control for Phase	✓	✓	✓	✓	✓	✓
Control for observables		✓	✓	✓	✓	✓
Village Fixed effects			✓	✓	✓	✓

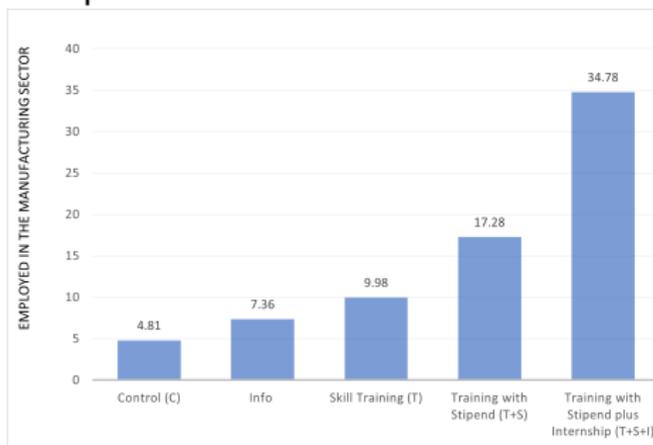
- Relative to T2, training completion is more likely for T3.
- However, training completion is less likely for T4.

# Reasons for Program Non-uptake by Gender

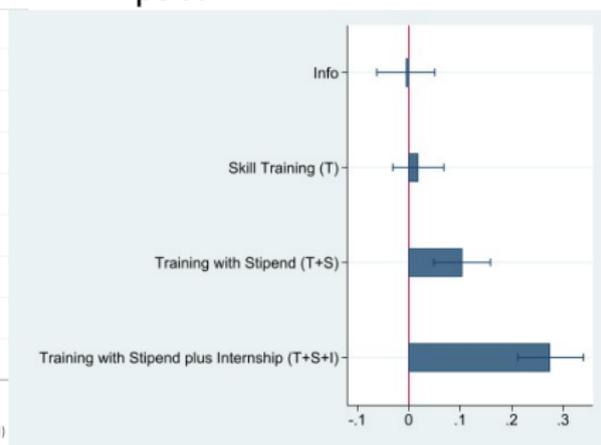


# Manufacturing Sector Employment after 6 months

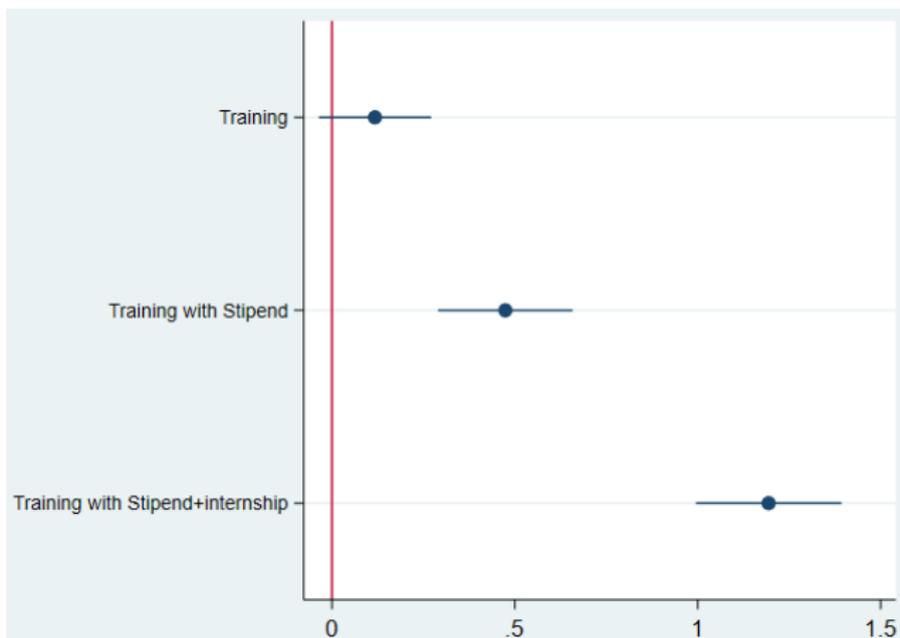
## Sample Means



## ITT Impact



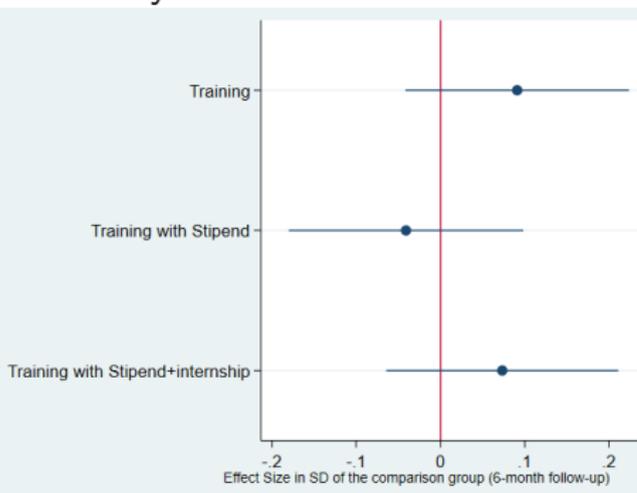
## Employment Index after 6 months



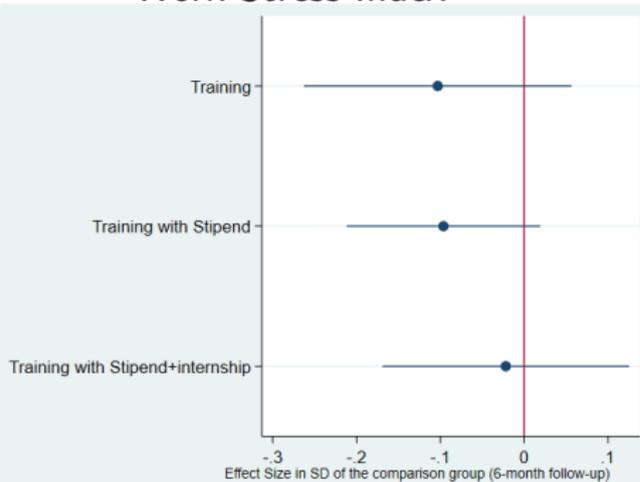
- Standardized from a family of variables (Kling et al., 2007).
- # mth empl, hrs worked past mth, any wage work last 6 mth, weekly wage work hrs last 6 mth.

# Health and Stress after 6months

## Physical Health Index



## Work Stress Index



- No obvious negative impact both in terms of physical health and work stress.

## Summary of impacts on participants

- Internship and stipend components coupled with training showed success in terms of
  - Work (getting an employment, income, etc)
  - Remittances
  - Savings
- Also, these treatments increase aspirations and lower borrowing (internship only).
- No significant negative effect on physical health or self-reported stress.
- **What about the rural households?**

## Household income after 12 months

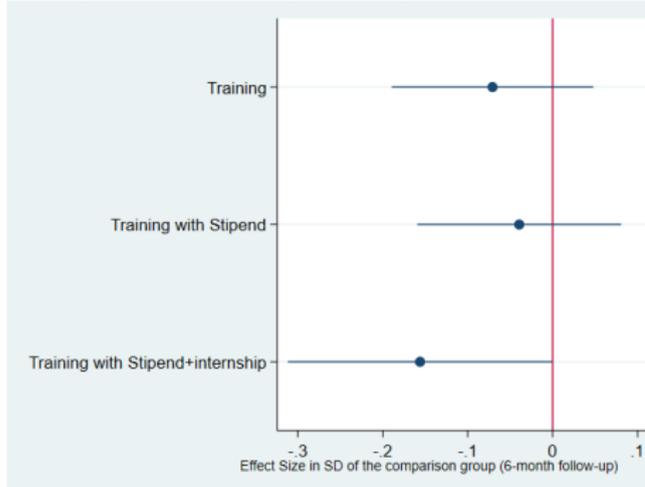
	(1) Dummy: Any Urban labor Income	(2) Total Urban labor income	(3) Months of remittance	(4) Frequency of remittance	(5) Total remittance
(T) [Skill training]	0.025 (0.021)	2497.3 (2128.91)	0.208 (0.13)	0.217* (0.13)	799.5 (671.84)
(T+S) [Skill training with Stipend]	0.032* (0.0)	2797.0 (1856.57)	0.43*** (0.13)	0.43*** (0.13)	2768.9** (1024.25)
(T+S+I) [Skill training, stipend plus internship]	0.049** (0.020)	4901.31** (2177.3)	0.97*** (0.14)	1.02*** (0.15)	2971.97** (773.23)
Observations	2120	2120	2120	2120	2120
Control Mean	0.094	10,123.44	0.428	0.433	2,200.36
R-squared	0.186	0.196	0.227	0.226	0.174
P-value for joint significance	0.051	0.131	0.000	0.000	0.000
Stipend effect: (T+S)-(T) (beta coef.)	0.006	299.7	0.2	0.2	1,969.4
Stipend effect: (T+S)-(T) (p-value)	0.78	0.89	0.09	0.09	0.03
Internship effect: (T+S+I)-(T+S) (beta coef.)	0.02	2,104.26	0.54	0.59	203.05
Internship: (T+S+I)-(T+S) (p-value)	0.43	0.37	0.00	0.00	0.81
Outcome at Baseline	Yes	Yes	Yes	Yes	Yes
Control for Phase and Village	Yes	Yes	Yes	Yes	Yes

- Income and remittances receipts for the household in Gaibandha tend to increase for T3 and T4 groups.

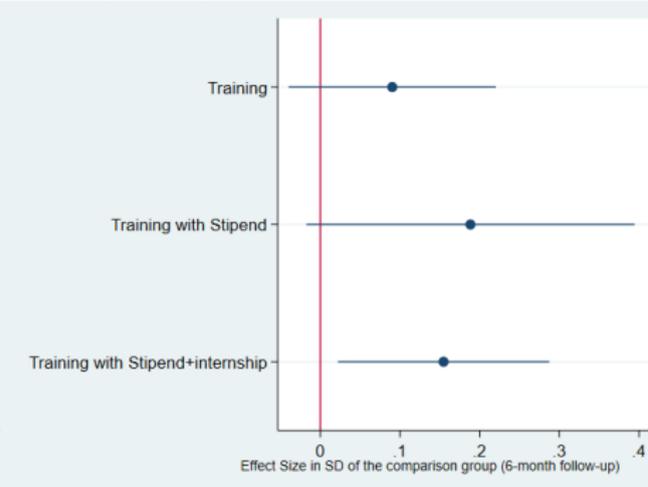
# Poverty, illness, and assets after 12 months

ITT Graphs: Household 12 month's follow-up data

## Household's Illness Index



## Household's Asset Index



- Further, income poverty drops by 12pp [8pp] from 54% in control in T4 [T3].
- No change in consumption poverty.

## Mechanism: OJT reducing the job search cost?

Treatment	Job Employment Sector (in percentage)					
	RMG	Textile	Other Factory	Service	Others	Total
Control (C)	2.31	4.35	0.00	11.11	0.00	2.96
Information (T1)	8.85	14.49	16.67	11.11	42.86	11.02
Training (T2)	14.23	13.04	16.67	16.67	0.00	13.98
Stipend (T3)	25.00	21.74	27.78	16.67	42.86	24.46
Internship (T4)	49.62	46.38	38.89	44.44	14.29	47.58
Total	100.0	100.0	100.0	100.0	100.0	100.0

- Internship helps participants set foot in a manufacturing firm (Hardy and McCasland, 2017)?
  - Program uptake was 60%
  - Employment success at 6 month (given uptake): 58%
  - Employed in the RMG/textile (given employment): 91%.
  - Continue employment at the place internship (given employment): 56%.

# Impact Mechanism: Risk-Aversion

	(1)	(2)	(3)	(4)
	Search of RMG job after intervention	Ever migrated after intervention	Currently migrant	Employed in RMG sector
Control × Risk-averse=1	-0.00579 (0.0729)	-0.00579 (0.0729)	0.0430 (0.0490)	0.00163 (0.0549)
Information (T1) × Risk-averse=0	0.00983 (0.0362)	0.00983 (0.0362)	-0.0228 (0.0236)	-0.0204 (0.0230)
Information (T1) × Risk-averse=1	0.0240 (0.0443)	0.0240 (0.0443)	0.00813 (0.0347)	-0.0136 (0.0306)
Training (T2) × Risk-averse=0	0.0815** (0.0385)	0.0815** (0.0385)	0.00202 (0.0222)	-0.000152 (0.0240)
Training (T2) × Risk-averse=1	0.0416 (0.0427)	0.0416 (0.0427)	0.00929 (0.0334)	0.0279 (0.0322)
Stipend (T3) × Risk-averse=0	0.171*** (0.0387)	0.171*** (0.0387)	0.0529* (0.0270)	0.0616** (0.0254)
Stipend (T3) × Risk-averse=1	0.211*** (0.0492)	0.211*** (0.0492)	0.0603* (0.0361)	0.0912** (0.0387)
OJT (T4) × Risk-averse=0	0.347*** (0.0476)	0.347*** (0.0476)	0.123*** (0.0315)	0.168*** (0.0307)
OJT (T4) × Risk-averse=1	0.424*** (0.0583)	0.424*** (0.0583)	0.214*** (0.0499)	0.278*** (0.0591)
Observations	2142	2142	2142	2142
Other Controls	Yes	Yes	Yes	Yes

Clustered Standard errors at the village level is in the parentheses

\*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01

## Cost-benefit calculations

- Back-of-envelope calculation shows that the benefit-cost ratio of 1.33 for T3 and 8.85 for T4.
- We recovered the cost of the additional components by 6 months
  - T3 earned 49 USD more (provided 45 USD stipend)
  - T4 earned 115 USD more (provided 85 USD for stipend + internship)
- Compared with other programs, a very cost effective intervention
  - For example, take Hicks et al (2016) study in Kenya.
  - 460 USD voucher for vocational training.
  - Yield no impact on earnings.

## Discussion

- Why training with stipend has an effect?
  - Credit constraint under costly skill acquisition (Jansen, 2010)
  - Opportunity cost of training
- Internship has additional effects
  - Acquire skills
  - Enable participants make informed decision
  - May reduce the job search cost.
  - Build network.
- Consumption poverty did not improve.
  - Remittance amount was not large enough.
  - Remittance invested in assets.

## Concluding Remarks

- A potentially promising development policy would be to exploit labor market opportunities for the poor
  - Existing active labor market policies have been largely unsuccessful.
  - Most of them are focused on either wage subsidy and vocational training.
- This study shows vocational training program can be successful.
  - Support for liquidity constraint face by the poor
  - Assistance for job linkage through internship (reducing the risk of migration)
  - Could be an effective and viable anti-poverty scheme for the poor youth.

**Thank you!**  
**Questions and comments are welcome!**

# Balance Table (Well Balanced)

Variables	Mean of (C)	Beta coefficient of the balance test (OLS)							
		(T1 - C)	S.E.	(T2 - C)	S.E.	(T3 - C)	S.E.	(T4 - C)	S.E.
Age	22.27	0.471	(0.643)	0.197	(0.559)	-0.232	(0.689)	-0.102	(0.605)
Sex (Female ==1)	0.30	0.117	(0.110)	0.021	(0.093)	0.038	(0.106)	0.054	(0.098)
Education: Primary	0.10	0.034	(0.062)	-0.025	(0.054)	0.039	(0.053)	0.054	(0.066)
Education: Secondary	0.47	-0.076	(0.090)	-0.039	(0.085)	-0.081	(0.093)	-0.063	(0.097)
Education: Higher Secondary	0.00	0.000	(0.001)	0.000	(0.001)	0.011	(0.010)	-0.001	(0.001)
Married	0.32	0.071	(0.085)	0.020	(0.062)	-0.043	(0.080)	-0.041	(0.064)
Belongs to a Ultra-poor household	0.52	-0.095	(0.087)	-0.062	(0.084)	-0.014	(0.072)	-0.084	(0.083)
No of Children in the household	0.43	0.182	(0.161)	0.152	(0.117)	0.057	(0.134)	0.041	(0.111)
Size of the household	3.99	0.041	(0.235)	-0.029	(0.212)	0.238	(0.212)	0.132	(0.177)
Participant is the head of the HH	0.21	-0.037	(0.064)	0.020	(0.059)	-0.070	(0.067)	-0.061	(0.053)
Food-shortage in Monga	0.37	0.093	(0.067)	0.024	(0.060)	0.097	(0.060)	0.089*	(0.053)
Size of Landholdings (in decimals)	2.26	-0.240	(0.195)	-0.291	(0.197)	-0.173	(0.224)	-0.152	(0.174)
Past profession: Wage Employment	0.17	0.023	(0.087)	0.044	(0.080)	-0.037	(0.065)	-0.036	(0.057)
Past profession: Self-employment	0.04	-0.011	(0.027)	-0.010	(0.022)	0.004	(0.032)	0.023	(0.029)
Past profession: Farming	0.04	-0.022	(0.041)	-0.024	(0.045)	0.016	(0.046)	-0.037	(0.044)
Past profession: Small business	0.03	0.014	(0.020)	0.016	(0.017)	0.012	(0.016)	-0.016	(0.023)
Profession: Unemployed	0.71	0.022	(0.097)	0.004	(0.083)	0.033	(0.086)	0.074	(0.068)
Religion is Muslim (dummy)	0.93	-0.029	(0.032)	-0.015	(0.019)	-0.055	(0.043)	-0.013	(0.023)
Risk Averse (dummy)	0.73	0.099*	(0.059)	0.050	(0.083)	0.009	(0.085)	0.061	(0.072)
P-value of F-test of joint significance		0.61		0.34		0.34		0.74	
Observation		697		697		697		697	

# Attrition

Treatments	6 months follow-up	12 months panel	18 months follow-up
Control (C)	2.09	2.62	3.66
Information (T1)	3.36	2.76	5.73
Training (T2)	2.57	1.98	6.32
Training + Stipend (T3)	2.17	2.17	7.31
Training + Stipend + Internship (T4)	3.95	3.56	6.32
<b>Overall</b>	<b>2.93</b>	<b>2.62</b>	<b>6.19</b>

- Tracking migrants were difficult.
- Incentivized participants by providing them with mobile SIM cards.
- Topped-up their airtime balance during follow-up surveys.
- Overall attrition rate was 3.91%.

