Encouraging Skilling and Employment Opportunities for Female Rural-to-Urban Migrant Workers

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# Abstract

This paper evaluates the impact of a comprehensive migration support intervention on employment outcomes for rural women in India participating in the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) program. Partnering with one of India's largest garment manufacturers, we designed a randomized controlled trial (RCT) to assess the effects of pre- and post-migration support on women's decisions to migrate, job tenure, and workplace performance. The intervention included information sessions before migration and ongoing support after placement.

Our results reveal that while the intervention did not significantly affect overall migration rates, it improved job retention and attendance for those who migrated. Women in the treatment group exhibited a 30% reduction in monthly turnover rates and a 3.3% increase in job attendance compared to the control group. Further analysis indicates that post-migration support significantly enhanced workers' trust and job satisfaction, whereas the pre-migration information sessions had limited impact, likely due to information spillover among participants.

This study contributes to the literature on labor migration by demonstrating the importance of targeted post-migration assistance in improving employment outcomes for female migrants. The findings underscore the need for policies that not only facilitate migration but also address post-migration challenges, thereby enhancing the economic and social empowerment of rural women.

# 1. Introduction

Globalization is driving the expansion of labor-intensive manufacturing, particularly in garment and textile industries within developing countries. Since these industries have a significant female workforce, it offers promising opportunities for narrowing the gender gap in overall employment (Klasen & Pieters, 2015; Luke & Munshi, 2011). However, firms struggle to meet the increasing demand for workers due to a spatial mismatch: available labor is concentrated in rural areas, while job opportunities are primarily found in urban regions (Munshi & Rosenzweig, 2009). This mismatch, coupled with skill deficiencies and mobility restrictions, hinders women from migrating to urban factories and filling vacant positions (World Bank, 2008).

In 2014, the Government of India launched the prominent Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) as part of its comprehensive "Skilling India" strategy. This initiative aims to support and subsidize private sector enterprises in establishing vocational training facilities and creating formal job opportunities for rural youth. Despite the program being largely cost-free, women's participation remains low due to cultural norms surrounding early marriage, mobility limitations, and competing demands for female labor in non-market activities such as household chores, domestic production, and childcare. Furthermore, a significant number of women who undergo skills training do not actively pursue job placements, resulting in substantial costs for both the firms, government, and the women themselves.

Within our study region of Karnataka, the state government conducted a recent evaluation to explore the factors contributing to the low job placement rate within the DDU-GKY program. The evaluation highlighted the challenges faced by firms in effectively addressing the issues that arise when candidates are placed far from their homes and providing the necessary ongoing support for migration (Department of Planning, Program Monitoring and Statistics, Government of Karnataka, 2020). The report emphasized that offering adequate support in these areas could greatly improve employment outcomes and job placements. These findings align with a survey conducted by Prillaman et al. (2017) involving over 2,500 former DDU-GKY trainees. The survey revealed that women primarily avoid employment opportunities due to concerns related to migrating to unfamiliar locations. Additionally, it demonstrated a strong correlation between access to postmigration support and longer job tenures, despite the limited availability of such support. Although

these studies provide descriptive evidence and potential solutions to the employment barriers faced by rural women, there remains a significant knowledge gap regarding the effectiveness of migration support interventions in promoting women's migration and formal employment.

In this paper, we collaborate with one of the world's largest garment manufacturers in India to investigate the effects of migration support on job placement and other employment outcomes for rural women enrolled in the DDU-GKY program. Specifically, our study focuses on trainees of the program who are offered formal positions at urban factories within our partner firm upon completing their training. To facilitate a smooth transition and assist women in adapting to their new environment, we have designed a comprehensive intervention that provides support both before and after migration. Using a randomized controlled trial approach, we aim to assess the causal impact of the intervention on the women's decision to migrate for employment, job tenure and performance in the workplace.

Using firm administrative data combined with a short survey, this paper focuses on examining the short-term effects of the intervention on trainees' migration and employment. Our findings indicate that the intervention does not significantly affect trainees' migration decisions; the proportion of trainees who migrated to the city is not statistically different between the treatment and control groups. However, among those who did migrate, individuals from the treatment group are more likely to stay at the partner firm. The estimates suggest that migrants in the treatment group have a monthly turnover rate which is about 3 percentage points lower, representing a 30 percent reduction relative to the control group's average rate. Additionally, we observe that employees in the treatment group exert greater effort in their jobs, attending an average of 0.66 more days per month than workers in the control group—a 3.3 percent increase relative to the control mean. Overall, the findings highlight the importance of providing targeted information and support to enhance employment outcomes for rural women in the context of labor migration.

To delve into the underlying mechanisms, we examine the treatment effects on trainees' knowledge about the prospective jobs at the partner firm, their trust, and overall job satisfaction. Consistent with the previous findings, these analyses suggest that the pre-migration intervention, which is mainly in the form of information sessions, does not significantly improve trainees'

knowledge regarding migration and job-related aspects. However, post-migration support at the firm significantly improved workers' trust and job satisfaction. Additional analysis points to the prevalence of information spillover during the pre-migration intervention, which likely explains the lack of a treatment effect on knowledge and migration decisions.

### 2. Contribution to Literature

Rural-to-urban migration in India is common, often fueled by a lack of economic opportunities and the hope of a better life in the city (Hanim et al. 2023, Shi 2020). For women, rural-to-urban migration can be seen as a path to greater financial independence, higher socioeconomic status, and more control over marital and fertility decisions. While some studies have found evidence supporting this (Shiferaw et al. 2017, Jensen 2012), others report mixed results (Cerutti 2009, Boujija 2024), with many highlighting the lack of networks, information, and support as factors that severely hinder migrants' ability to achieve a better life (Kersh 2021, Hanim et al. 2023).

Vocational training and skilling programs are often seen as a way to reduce some of the risks of migration. Studies have found that vocational training, particularly programs that offer job guarantees or recruitment support, can improve both migration rates and post-migration outcomes. For example, Shonchoy et al. 2019 found that among four treatment groups—ranging from a single intervention session to a stipend with a month-long paid apprenticeship—the treatment that included some promise of employment was the most effective in increasing both migration rates and outcomes such as employment likelihood and wages. However, the study also found lower uptake among women due to unique socioeconomic barriers they face in migration.

This study relates to a growing body of research investigating the role of information and assistance in migration and employment decisions among rural households (Shonchoy et al. 2018, Shrestha 2020, Chakravorty et al. 2021, Baseler 2022). Research on this topic is relatively new and expanding. Much of it focuses on migrants' expectations regarding wages and living standards and how to recalibrate these expectations to aid more accurate decision-making (Shreshta 2019, Baseler 2022) or the incentives that could make migration more appealing (Bryan et al. 2014). As a result, studies often limit their findings to the frequency of migration and limited post-migration outcomes, rather than exploring how providing information to migrants could enhance their

migration experience.

These previous studies suggest that informing potential migrants about wages, work environment, and other job-related aspects at their destinations can significantly influence their migration decisions. This study contributes to the literature by investigating the effect of post-migration assistance, in addition to pre-migration information provision. Furthermore, our study focuses exclusively on women, allowing us to explore how migration and employment opportunities unique to women shape power dynamics and other outcomes within the household.

#### **3. Experimental Design**

#### 3.1. Context

This study focuses on rural female participants from three vocational training centers and their respective households. The training centers, located in Basavakalyan, Molakalmuru and Challakere districts in Karnataka, are operated by our partner firm, one of the world's largest garment manufacturers. The recruitment for the training is mandated by the government skilling scheme, DDU-GKY, and the program receives subsidies from the Indian government. Eligibility for the program is open to women aged 18-35 years who are residing in nearby villages, have at least 5 years of schooling and live below the poverty line. The training is conducted in batches, with the centers providing free skills training in stitching for a duration of 2 months. Upon completion of the training, the trainees are offered guaranteed employment at the partner firm's factories in Bengaluru. Before joining as formal employees, they undergo an additional month of on-the-job training (OJT).

#### 3.2. Sample

On average, each training batch consists of around 20 women. For this study, we will include a total of 16 batches of trainees across the two DDU-GKY training centers in rural Karnataka operated by our partner firm, resulting in a sample size of 321 women participating in the training program.

#### 3.3. Treatment and Randomization

A randomized controlled trial (RCT) methodology is to be used to answer the research questions. To evaluate the causal impacts of the intervention on women's labor market, family, and other socioeconomic outcomes, post-enrolment into a batch we will randomly select a subset of participants to receive the intervention, and they will comprise the treatment group. The remaining candidates will experience the standard training program as usual and constitute the control group. The randomization will be stratified by training batch and conducted at the individual level. In rare cases, there might be more than one trainee within a household, and we will ensure that trainees from the same household are allocated to the same group to prevent information spillover within the household.

We aim to achieve balance in three sets of balance variables (at the trainee level, household level, and other women level, respectively) in randomization. As pointed out by Banerjee et al. (2020), the traditional randomization method that repeatedly rerandomizes until an absolute balance goal is achieved improves the subjective performance of RCTs but reduces the robustness of results. Following their suggestion, we adopt the quantile-targeting rerandomization method instead, which draws a large set of independent, exchangeable assignments, and choose one randomly among a fixed quantile of most balanced assignments. The details are as follows:

1. Randomly draw 5,000 independent treatment assignments. For each assignment, we do the following:

- a) For each balance variable, regress it on the treatment dummy (controlling for batch fixed effects and clustering the standard error at household level) and store the pvalue of the treatment dummy.
- b) Do a joint test using seemingly unrelated estimation (controlling for batch fixed effects and clustering the standard error at household level) separately for householdlevel variables, trainee-level variables and other-woman-level variables. Store the pvalues.
- c) Take the minimum of above p-values as a measure of balance.

2. Choose one assignment with uniform probability among the five percent most balanced assignments.

Trainees in the treatment arm will receive migration support services for three months- starting in

the second month of training at the center, continuing through OJT and first month of employment. The intervention can be thought of as consisting of two phases:

- 1. **Pre-migration assistance** through two information sessions organized at the rural training centers during the second month of training period. Our main aim from this phase of the intervention is that trainees and their parents would be better informed about the working environment in the partner firm and the living conditions in Bangalore. Some of the topics that will be covered during this phase are information about expected salary and costs of urban living; the expected savings path over time; visual depiction and description of facilities available for worker welfare (including hostels, medical facilities, etc.); working condition(s) in the factory floor and importance of maintaining good physical health and nutrition through the transition. The content also includes informative and encouraging messages from management personnel in partner firm's human resource department as well as more experienced DDU-GKY trainees on how to deal with this rural to urban transition and adapt to the new work environment. In the first counseling session at the center, the family members are also invited. In the second session, it is only the trainees who attend. Through these comprehensive information sessions, we expect to reduce the migration-related uncertainty and safety concerns faced by the candidates. We also expect that those who migrate to Bangalore would be less likely to be negatively surprised, exhibit greater readiness for work on the factory floor and living in Bangalore, and thus result in longer retention at the job. By including the family members in the first session, we expect to generate greater family support for the trainees should they choose to migrate and get placed.
- 2. Post-migration assistance through information and counseling sessions organized in Bangalore during the OJT period and the first month of employment to ease the transition for new migrant trainees. Some of the areas that will be discussed include: the provision of emotional support to mitigate the migration effects on workers mental health; leveraging the experience and empathy of workplace management; informing trainees of the grievance redressal tools available to them; suggest ways to cope with work stress and migration related adjustment issues, inform trainees about the social security schemes and

govt. services available for workers; and advise them on how to better manage time for work-life balance. These sessions will be conducted at the hostels wherein the trainees reside post migration.

We also organize placebo sessions for the control group that are conducted simultaneously as the sessions organized for the treatment group and are similar in duration. These placebo sessions are organized to control the information spillover between the treatment and placebo group as well as to minimize the negative impact of preferential treatment to a particular group of trainees. During these placebo sessions, we cover the counseling topics briefly, but most of the session will be spent on interactive activities and games with the control group participants.

# 4. Data

Table A1 in the Appendix provides a summary of the means and balance tests for key baseline variables in the subsample. The baseline survey was conducted after the training batch freezes and before the intervention started, which allowed us to measure important pre-intervention characteristics of the individual and the household. The baseline questionnaire administered to the trainee includes, among other things, modules for employment histories, marital, fertility, gender attitudes, decision making power, investment in their own children, and health, mental health, attitudes towards intimate partner violence. We examine 26 household characteristics and 29 trainee characteristics and find that no household variable has imbalance (p < 0.1). Moreover, when conducting joint significance tests for both household and trainee characteristics, we find no significant deviations. Thus, we successfully achieve balance across the randomly assigned treatment and control groups about these variables.

We utilize two complementary datasets. The first dataset consists of administrative data obtained from the partner firm, which allows us to examine the employee level outcomes such as job take up attendance, etc. of the trainees at the firm. Additionally, we conduct a migration experience survey that covers all trainees, including those who did not migrate, after the completion of the post-migration intervention. The survey is administered between the mid of the 1st month of placement and the beginning of the 2nd month of placement. Along with tracking the trainees' migration and employment status, the survey includes questions related to their knowledge about various job aspects, the availability of grievance redressal tools at the workplace, and their subjective well-being as migrants.

Currently, we have completed the post-migration intervention for the first sixteen batches, which includes a total of 321 trainees. We have successfully tracked and surveyed most of this sample, regardless of whether they migrated or not. The attrition rates for the treatment group and control group are 13.4% and 12.2% respectively, and the difference is not statistically significant (p = 0.8).

#### 5. Empirical Results

The intervention was randomly assigned, hence the research design used in this paper is based on comparisons of treatment and control group means. We estimate the effects of the intervention using the following regression equation:

$$Y_{ib} = \alpha + \beta T_i + \gamma X_{io} + \lambda_b + \mathcal{E}_{ib}, (1)$$

where  $Y_{ib}$  is an outcome variable for trainee *i* from training batch *b*;  $T_i$  is a dummy indicating whether trainee *i* has been assigned to the treatment group;  $X_{io}$  is a vector of baseline covariates;  $\lambda_b$  is the batch (strata) fixed effects; and  $\mathcal{E}_{ib}$  is the error term. In each of the following analysis tables, we first report results without baseline controls  $X_{io}$ , and then report results with these controls. Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors are clustered at the household level. The key parameter of interest,  $\beta$ , identifies the effects of the intervention on trainees' outcomes.

#### **Results on Migration and Employment**

Overall, 70.4% of the female trainees who completed the DDU-GKY training at the rural training centers have migrated to Bangalore for OJT. The top reasons cited by trainees for dropping out of the program were health problems and studying, with 25.6% and 21.8% of dropouts reporting it

as one of the reasons, respectively. Safety concerns (16.7%), housework needs (19.2%), and objections from family members (10.3%) are also important factors restricting their rural to urban migration decisions.

The results in Table 1 suggest that our pre-OJT intervention did not significantly impact OJT takeup. Trainees in the treatment group are about 2 percentage points less likely to migrate to Bangalore for work at partner firm, although this difference is not statistically significant and is small relative to the average take-up rate. One possible explanation for this preliminary finding is that migration barriers, such as safety concerns, uncertainty, and psychological costs, are substantial. While our intervention focused on providing information, it may not have fully addressed other significant barriers. Additionally, extensive communication among trainees within the same batch may have led to information spillover to the control group, potentially underestimating the treatment effect. In the subsequent phase of our research, we plan to implement additional measures to prevent these spillovers and enhance the accuracy of our estimates.

	Ever Employ	ved by Partner firm	
	(1)	(2)	
Treatment	0237	0215	
	(.0515)	(.0533)	
Batch FE	Yes	Yes	
Extended controls	No	Yes	
Control mean	.717	.717	
Observations	320	320	

Table 1: Effects on Employment at partner firm-Full Baseline Sample and Admin Data

Notes: This table shows estimates of equation 1 using migration as the outcome variable. Migration is a dummy indicating whether the trainee has migrated to Bangalore for OJT. Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses. \*\*\* p < 0.01, \*\*p < 0.05, \*p < 0.1..

We examine the treatment effect on employee turnover rates and attendance for those women who have taken up employment at the partner firm. To do this, we estimate the following regression specification using the firm's administrative data spanning from September 2022 to July 2024:

$$Y_{ibkt} = \alpha + \beta T_i + \gamma X_{io} + \lambda_b + \mu_t + \varepsilon_{ib}, (1)$$

Here,  $Y_{ibkt}$  represents a specific workplace outcome for an employee *i* from the batch *b* in the *k*-month of her employment, and *t* denotes the calendar year-month.  $T_i$  is a dummy indicating whether the trainee has been assigned to the treatment group.  $X_{i0}$  is a vector of baseline covariates. The model includes relative period fixed effects  $\lambda_{bk}$  to flexibly control for trends in the turnover rate as tenure length increases, allowing these trends to vary by batch (strata). We incorporate calendar year-month fixed effects  $\gamma_t$  to account for seasonality and macroeconomic fluctuations. The key parameter of interest  $\beta$  identifies the effects of the intervention on the specific workplace outcome for female employees in this study.

We then examine the short-run effects of the intervention on trainees' employment outcomes conditional on migration in Table 2. Our outcome of interest in Column 1 is a turnover indicator based on the employee separation list, which is set to 1 in the month the employee leaves partner firm, and 0 prior to that. The variable is left missing for periods after the employee's departure. Our regression results indicate a substantial decrease in employee turnover rates. Specifically, the monthly turnover rate is about 3 percentage points lower in the treatment group, representing a 30 percent reduction relative to the control group's average rate. This estimate is significant at the 10% level, and with an increase in sample size, the statistical significance of the estimates may be enhanced. In Columns 2 and 3, we construct two attendance variables for the employee using administrative data. We observe that employees in the treatment group exert greater effort in their jobs, attending an average of 0.66 more days per month than workers in the control group—a 3.3 percent increase relative to the control mean. These findings suggest that our post-migration interventions, such as emotional support, stress management, and grievance redressal mechanisms, may have eased the transition for workers, making them more likely to remain in their jobs.

	Employee Turnover	Days of Attendance	Attendance Rate
	(1)	(2)	(3)
Treatment	0327*	.6563*	.0229*
	(.0184)	(.3825)	(.0132)
Batch by tenure-month FE	Yes	Yes	Yes
Calendar year-month FE	Yes	Yes	Yes
Extended controls	Yes	Yes	Yes
Control mean	.104	19.93	.676
Observations	1466	1466	1466

Table 2: Workplace Outcomes - Employee Sample and Admin Data Up until July 2024

Notes: This table shows estimates of equation 1 using several employment measures as the outcome variable. Employee turnover is an indicator variable which is set to 1 in the month the employee leaves partner firm, and 0 prior to that. The variable is left missing for periods after the employee's departure. Days of attendance are the total number of days the woman has attended work during a month. Attendance rate is the days of attendance for the woman divided by the total days the specific unit was open for operations.

Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses. \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.

The impacts on monthly retention are generally positive but not statistically significant. However, there is a noticeable pattern where the retention rate is substantially higher for the treatment group between 4 to 10 months after the start of their employment. These effects diminish as tenure length increases.



### 6. Mechanisms

The results suggest that the intervention did not significantly increase employment take-up, possibly due to substantial barriers to migration that are not easily mitigated. However, conditional on employment take-up, the intervention appears to have reduced turnover rates and increased attendance, indicating positive effects at the intensive margin. Next, we analyze the Migration Experience Survey data to explore the reasons behind these positive effects. The analysis is limited to survey respondents who have joined the company at some point.

In the migration experience survey, we ask trainees about various aspects of the job at the partner firm to examine whether the intervention improves their understanding of the job. Specifically, we ask about days of leave, months of maternity leave, ESI deductible, pension deductible, bus service deductible, and hostel (employer provided accommodation) fees deductible. For each aspect, we calculate the absolute difference between the trainees' estimates and the actual numbers as a measure of the trainees' knowledge about the job. Columns 2-7 of Table 3 report the treatment effects on these measures, and column 1 reports the treatment effect on a summary index constructed from these measures, with lower values implying a more accurate estimate of the job information. We can see that the treatment group does not have a significantly better knowledge of the job except for the information on maternity leave. It is important to note however, that we collected this data through the migration experience survey which was done around 1.5-2 months post the migration episode. Hence, it is likely that nearly all trainees have information from the partner firm itself, or own experiences on these measures (for example: trainees would have received a detailed salary slip at the end of first month post migration stating the deductibles like ESI, Pension, bus service fee, hostel fees). This is a possible explanation of why there are no statistical differences on questions around salary structure from work, and general leave policy. On the measure of maternity leave (column 3), it is less likely that the female workers would come to know this information under normal circumstances, and hence the treatment group shows greater awareness relative to the control group and the difference is statistically significant.

To check whether this is a potential reason, we restrict our sample to trainees who did not migrate to Bengaluru for OJT. We find that the treatment group trainees who did not migrate to Bengaluru

for OJT had higher levels of awareness on most outcome measures relative to control group trainees who did not migrate as well.

	Knowledge About Job Index	Days of Leave	Maternit y Leave	ESI	Pension	Bus Service	Hostel Fees
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treatment	049	.029	.315**	108	184	244	023
	(.162)	(.166)	(.149)	(.155)	(.148)	(.179)	(.132)
Batch FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extended controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control mean	.076	112	124	.127	.147	.099	.113
Observations	206	206	206	187	194	206	206

Table 3: Knowledge about Job Characteristics at Partner firm– Employee Sample and Survey Data

Notes: This table shows estimates of equation 1 using several measures of knowledge about the job at the partner firm as the outcome variable. The partner firm offers its employees 15 days of (casual) leave per year and 6 months of maternity leave per pregnancy. The monthly salary is deducted by 76 rupees per month before May 2023 and 87 rupees per month on and after May 2023 for ESI, 1,225 rupees per month before May 2023 and 1,385 rupees per month on and after May 2023 for pension, 350-400 rupees per month for bus service, and 750 rupees per month for hostel fees. In addition, Janoyada (the hostel management) covers the cost of medical treatment during the first 6 months at the partner firm. Dependent variables for columns 2-7 are the absolute difference between the trainee's knowledge and the actual job information in terms of days of leave and maternity leave, ESI deductible, pension deductible, bus service deductible, and hostel fees deductible. The dependent variable for column 1 is an index constructed from the six absolute difference variables and is constructed as follows. We first calculate the standardized value of each variable. Then we generate a variable as the average of these standardized variables and standardize it again to get the index.

Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses. \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.

The partner firm factory offers workers several grievance redressal mechanisms, which can be potentially useful in improving trainees' job take-up rate and retention. Table 4 restricts the attention to trainees that have migrated and examines whether they are more aware of these grievance redressal tools. In columns 2-5, dependent variables are dummy variables indicating whether the trainee knew about each of the available tools, and the estimated effects are large and positive. We also construct a summary index from these four dummy variables, and the treatment group has a 0.34 standard deviation higher value in this index, and the estimated coefficient is significant at the 5% level. The above results suggest that while knowledge about job benefits and other characteristics does not statistically differ between the treatment and control groups, the

intervention significantly improved employees' awareness of support mechanisms such as grievance redressal practices at the company, and it maybe be one of the reasons for the lower turnover rates observed among the treatment group workers.

	Grievance Redressal Knowledge	Toll-free Number	Suggestion Box	HR	Workers' Committee
	(1)	(2)	(3)	(4)	(5)
Treatment	.341**	.375**	.217	.147	.277*
	(.148)	(.145)	(.141)	(.161)	(.157)
Batch FE	Yes	Yes	Yes	Yes	Yes
Extended controls	Yes	Yes	Yes	Yes	Yes
Control mean	053	104	.029	.013	095
Observations	204	204	204	204	204

Table 4. Treatment effects on knowledge about grievance redressal tools

Notes: This table shows estimates of equation 1 using several measures of knowledge about the grievance redressal tools provided at the partner firm as the outcome variable. The sample is restricted to trainees that have migrated to Bangalore for OJT. Grievance redressal tools include calling a toll-free number, filing a complaint using the suggestion box, contacting the HR, welfare officer, or Organization Department, and contacting the Workers' committee. Dependent variables in columns 2-5 are dummy variables indicating whether the trainee knows about each of the tools. The dependent variable in column 1 is a summary index of the four dummy variables and is constructed as follows. We first calculate the standardized value of each dummy. Then we generate a variable as the average of these standardized variables and standardize it again to get the index.

Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses.

\*\*\* p<0.01, \*\*p<0.05, \*p<0.1.

In addition to the grievance redressal mechanism, we also ask migrants about their subjective wellbeing, including trust in the grievance redressal system, ease of transition, and satisfaction level. Columns 2-7 of Table 5 report the treatment effects on these measures, and column 1 reports the treatment effect on a summary index constructed from these measures, with higher values implying better well-being. We can only find significant effects in terms of overall well-being. However, all coefficients are large and positive, suggesting that the intervention may have increased trainees' employment rate by improving their subjective well-being.

	Trust	Ease of Transition	Overall Satisfaction with Job	Satisfaction: Workplace Environment	Satisfaction with Salary	Satisfaction with employer provided accommodation
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	.018	.037	.249*	.327**	.018	.096
	(.130)	(.150)	(.149)	(.159)	(.133)	(.154)
Batch FE	Yes	Yes	Yes	Yes	Yes	Yes
Extended controls	Yes	Yes	Yes	Yes	Yes	Yes
Control mean	.084	.052	.014	024	.109	.019
Observations	204	204	204	204	204	202

Table 5. Treatment effects on subjective well-being

Notes: Robust standard errors cluster by employee appear in parentheses.

Notes: This table shows estimates of equation 1 using several measures of subjective well-being as the outcome variable. The sample is restricted to trainees that have migrated to Bangalore for OJT. Dependent variables are all standardized values of survey questions that are asked on a 5-point scale. Trust measures trust with the various people and systems available to address grievances. Ease of transition measures the overall ease of the transition from hometown to living and working in Bangalore. Dependent variables in columns 4-7 measure overall satisfaction with the job, satisfaction with the workplace environment, current take-home salary, and the current hostel facility, respectively. The dependent variable in column 1 is an index constructed from the six dependent variables in other columns and is constructed as follows. We first calculate the standardized value of each variable. Then we generate a variable as the average of these standardized variables and standardize it again to get the index. Panel A does not control for baseline trainee characteristics and Panel B does. Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses. \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.

#### 6.1. Spillover

We find in section 5 that the intervention has significant effects on employment but not on migration. One possible reason for this inconsistency is information spillover. Due to the small sample size, we conduct randomization at the household level instead of at the batch level. Despite our efforts to minimize information exchange between the treatment group and the control group, there still might be some spillover. Hence, we examine in this subsection the presence of information spillover and how it might affect our program evaluation.

Table 6 shows that information spillover exists and is not uncommon. Overall, 30% of trainees shared the information with other trainees who were not invited after the session, and 11.1% of them can't remember whether they have shared this information. The spillover behavior does not differ greatly between treatment and control.<sup>1</sup>

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Spillover	ver Control		Tre	atment	Total		
	No.	%	No.	%	No.	%	
Yes	43	31.16%	43	28.86%	86	29.97%	
No	80	57.97%	89	59.73%	169	58.89%	
Can't Remember	15	10.87%	17	11.41%	32	11.15%	
Total	138	100.00%	149	100.00%	287	100.00%	

#### **Table 6. Spillover**

Notes: This table reports trainees' information spillover behaviors in the full sample and by treatment arms.

To further examine how information spillover affects the control group, we restrict the sample to the control group and compare migration and employment status between control group trainees that received spillover from treatment group trainees and other control group trainees that did not.

Table 7 presents the spillover effects on the migration behavior of control group trainees. We can see that trainees that received spillover were more likely to migrate, though the difference is not significant. Table 8 shows the spillover effects on employment outcomes. All estimated coefficients are negative and insignificant. Overall, the results suggest that information spillover may have some effects on migration but not on employment, thus leading to an underestimation of the treatment effects on migration. But why does the exchange of information only affect trainees' migration decisions? One possible explanation is that trainees within the same batch interact with each other more often before migration. Before migration, trainees stay in the same training center and have plenty of opportunities to exchange information that they acquired from the sessions. After migration and job placement, trainees are assigned to different factory units and hostels, and information exchange becomes less frequent. As a result, information spillover may affect control group trainees' migration decisions more than retention decisions.

<sup>&</sup>lt;sup>1</sup> One trainee in the treatment group has also shared information with another trainee in the Molakalmuru training center.

## Table 7. Spillover effects on migration

	(1)	(2)
	Migration	Migration
Spillover	0.11	0.065
	(0.12)	(0.123)
Extended controls	No	Yes
Control mean	0.782	0.782
Observations	138	138

Notes: This table shows estimates of equation 1 that restricts the sample to the control group and replaces the treatment dummy with the spillover dummy that equals one if the trainee received information spillover from the treatment group. The dependent variable Migration is a dummy indicating whether the trainee has migrated to Bangalore for OJT. Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses. \*\*\* p<0.01, \*\*p<0.05, \*p<0.1

#### Table 8. Spillover effects on employment

	(1)	(2)
	Employed at partner firm	Employed at partner firm
Spillover	0.062	-0.01
	(0.116)	(0.118)
Extended controls	No	Yes
Control mean	0.73	0.73
Observations	138	138

Notes: This table shows estimates of equation 1 that restricts the sample to the control group and replaces the treatment dummy with the spillover dummy that equals one if the trainee received information spillover from the treatment group. The dependent variables "Ever Firm Employment" is a dummy indicating whether the trainee has ever taken up job at the partner firm. Extended controls are baseline characteristics, which include trainee's age, marital and childbearing status, and a dummy indicating whether she has completed post-secondary education; the number of members and female members in the household, a dummy indicating whether the household head is female, and log of per capita household income last year. Standard errors clustered at the household level are in parentheses. \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.

# Conclusions

This study evaluates the short-term impacts of a comprehensive migration assistance intervention on rural female trainees in India. While we do not find significant effects of the intervention on the overall migration rate, we do observe significant and positive effects on the trainees' tenure at the partner firm and their general attendance at work, conditional on migration. Overall, the findings highlight the importance of providing targeted information and support to enhance employment outcomes for rural women in the context of labor migration.

To understand the mechanisms behind these effects, we explore several potential pathways through which the intervention operates. Our analysis provides suggestive evidence that the intervention enhances migrants' knowledge about the available grievance redressal tools at the workplace and contributes to an improvement in their subjective well-being. These findings indicate that the intervention has a positive influence on trainees' experience in their new work environments. Furthermore, we investigate the possible reasons for the intervention's null effect on the overall migration rate. Our findings suggest that information spillover before migration may play a crucial role in shaping migration decisions. This implies that the intervention's impact on migration decisions may be mediated by factors beyond the scope of the intervention itself.

Our study has several broad policy implications in the context of labor migration. First, it reaffirms that information provision is important in shaping migration and employment outcomes. While the previous literature primarily focused on earnings opportunities and safety concerns in information interventions (Shrestha, 2020; Chakravorty et al., 2021; Baseler, 2022), our findings highlight the value of including additional aspects related to destination jobs, such as informing trainees about available grievance redressal tools at the workplace. Therefore, future studies should further explore other job-related aspects that are critical to the migration experience and develop corresponding information packages to facilitate migrants' transition. Second, our study emphasizes the importance of post-migration assistance. Vocational training programs entail substantial costs for firms, governments, and trainees themselves. To maximize the benefits of these programs, it is crucial to improve migrants' placement outcomes through migration support. In our case, the post-migration intervention significantly improves trainees' post-placement job tenure, indicating that the relatively low-cost information and counseling sessions can effectively support migrants during their transition. We recommend that firms' human resource departments invest more resources in designing and providing migration support to reduce worker turnover and optimize labor costs.

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# Appendix

# Table A1. Randomization Balance on Observables at Baseline

Variable	Control Mean	Treat Mean	Diff. (C-T)	P value	N
Panel A. Household Characteristics					
HH head belongs to backward classes	0.952	0.976	0.024	0.417	310
# of people in the HH	5.530	5.452	-0.078	0.744	310
# of children in the HH	1.289	1.107	-0.182	0.372	310
# of female members in the HH	3.120	2.893	-0.228	0.210	310
HH head is female	0.096	0.190	0.094	0.104	310
Has another female aged 18-35 in the HH	0.410	0.405	-0.005	0.920	310
# of members outside the HH for education/training/work purposes	0.542	0.405	-0.137	0.305	310
# of members working outside for pay	1.518	1.738	0.220	0.203	310
# of members working in family-owned farm business	0.687	0.548	-0.139	0.245	310
# of members working in family-owned non-farm business	0.157	0.202	0.046	0.517	310
Primary income source is wage from non-farm private sectors	0.060	0.095	0.035	0.399	310
Log of per capita HH income in the last 12 months	10.247	10.280	0.033	0.774	310
Share of HH income from female members	0.244	0.254	0.010	0.708	310
Acre of land owned, unconditional	2.133	1.913	-0.220	0.631	310
Acre of land cultivated, unconditional	1.428	1.655	0.226	0.591	310
Log of total consumption per capita	10.626	10.677	0.051	0.436	310
Log of food consumption per capita	10.181	10.229	0.049	0.488	310
Log of staple food consumption per capita	8.634	8.743	0.109	0.235	310
Log of non-staple food consumption per capita	9.912	9.939	0.027	0.720	310
Log of non-food consumption per capita	9.436	9.478	0.042	0.537	310
Log of durable goods consumption per capita	6.979	7.172	0.194	0.227	300

Log of savings made last year	7.486	6.334	-1.152	0.107	310
Log of remittances over the last 12 months	1.594	1.360	-0.234	0.659	310
Patriarchal norms index	-0.114	0.093	0.207	0.222	310
Gender attitudes index	0.109	-0.027	-0.136	0.279	310
Domestic violence attitudes index	-0.044	0.077	0.122	0.385	310
Joint Test					310
Panel B. Trainee Characteristics					
Age	20.45	20.14	-0.313	0.555	321
Currently married	0.060	0.070	0.010	0.842	321
Has any children	0.060	0.047	-0.013	0.708	321
Has completed at least secondary education	0.929	0.942	0.013	0.661	321
Has completed post-secondary education	0.095	0.093	-0.002	0.962	321
Last economic activity is work outside for pay in non- farm private sector	0.024	0.058	0.034	0.219	321
Log earnings from working outside home over the last 12 months	1.794	2.068	0.274	0.652	321
Ever migrate to a city/town for work purposes	0.119	0.116	-0.003	0.867	321
Log of personal expenditure last month	6.950	7.063	0.113	0.732	321
Decision-making (financial decisions) index	0.027	-0.051	-0.078	0.607	321
Decision-making (mobility) index	0.094	-0.079	-0.173	0.237	321
Patriarchal norms index	-0.107	-0.012	0.095	0.588	321
Gender attitudes Index	0.201	0.159	-0.041	0.821	321
Domestic violence attitudes index	0.001	0.034	0.033	0.784	321
Marble questions index	0.016	0.189	0.174	0.289	321
Standardized self-reported health score	0.110	0.046	-0.064	0.797	321
Has been sick during the last 4 weeks	0.238	0.256	0.018	0.866	321
Standardized satisfaction score	0.099	0.142	0.044	0.538	321
Cantril's ladder index	0.002	-0.023	-0.025	0.852	321
Rosenberg Self Esteem index	-0.107	-0.127	-0.020	0.714	321

K10 Index	-0.018	0.052	0.070	0.645	321
Marriage aspiration index	0.032	-0.015	-0.047	0.579	290
Fertility aspiration index	0.057	0.033	-0.024	0.917	285
Controlling behavior from non-partners index (binary)	0.003	0.146	0.143	0.377	281
Controlling behavior from non-partners index (frequency)	-0.032	0.310	0.198	0.222	281
Psychological violence from non-partners index (binary)	0.131	0.040	-0.091	0.613	281
Psychological violence from non-partners index (frequency)	0.100	0.046	-0.054	0.782	281
Physical violence from non-partners index (binary)	-0.011	0.093	0.104	0.630	281
Physical violence from non-partners index (frequency)	-0.037	0.108	0.145	0.466	281
Joint Test					281

Notes: This table reports subsample means and tests of balance for key balance variables. P-values are derived from linear regressions that regress the variable of interest on the treatment dummy, controlling for batch fixed effects and clustering the standard errors at the household level. The joint test refers to a seemingly unrelated regression that controls for batch fixed effects and clusters the standard errors at the household level. All indices are constructed as follows. We first calculate the standardized value of each sub-component that is used to construct the index. We then generate a variable as the average of these standardized variables and standardize it again to get the index. Patriarchal norms index, gender attitudes index, and domestic violence attitude index are based respectively on three survey questions about patriarchal norms, 13 questions about gender attitudes, and five questions about tolerance of domestic violence, with higher values referring to more regressive views. Decision-making (financial decisions) and decision-making (mobility) indices are based respectively on six survey questions about the power to make financial decisions and two questions about the power to make mobility decisions, with higher values implying more power within the household. The marble question index is based on a beads experiment following Dean and Jayachandran (2019), which asks the respondent to rate the responsibility of husbands for household decisions relative to that of wives on five matters. Higher values imply more progressive views. We standardize self-reported health and life satisfaction on a 5-point scale with higher values corresponding to better health and higher satisfaction respectively. Cantril's ladder index is based on two survey questions about mental health, with higher values implying better mental health. The Rosenberg Self Esteem index and K10 index are based respectively on the Rosenberg Measure of Self Esteem questions and Kessler 10 Test questions, with higher values implying lower self-esteem. The marriage aspiration index is based on five questions asked to unmarried women and the fertility aspiration index is based on three questions asked to women who do not have any children and wish to have children, with higher values implying more progressive views. Controlling behavior, psychological violence, and physical violence indices are based on questions about trainees' experience of violence in these three categories last year from people that are not their partners, with higher values implying more exposure to violence. "Binary" means that the indices are based on dummy variables indicating whether the trainee has ever experienced violence, and "frequency" means that the indices are based on variables measuring the frequency of such violent experiences. \*\*\* p<0.01, \*\*p<0.05, \*p<0.1.