Pilot Project on Skills Development, Certification, and Recognition

Progress Report

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Executive Summary

This report provides an overview of the scientific committee's progress regarding the Pilot Project on Skill Development, Certification, Upgrading and Recognition.

The goal of this study is to investigate whether the acquisition of new skills by low-skilled migrant workers through an accredited training program has an impact on various outcomes of migrant workers in the UAE. More specifically, the study attempts to determine whether certified workers (those who have been provided with skills through a training program) are more productive and perform better than their uncertified counterparts.   Additional questions that will be asked in this study include issues around the impacts of migration on following: wages, subjective well-being or probability of remaining longer in the country.

Our preliminary findings suggest that the acquisition of new skills through the training program has a positive impact on the expected performance during the assessment phase of the workers; meaning a worker is expected to perform better at the assessment if he has received training previously.

Moreover, a worker's education level does seem to impact the probability of receiving a job offer or not, even in the case of low-skilled labour. Indeed, our preliminary results show that the level of education is relatively lower for the workers who were rejected (i.e. they were refused a job offer).   We caution that this is a very preliminary account of our research. As we collect more data and dig deeper into numbers and modelling there is a chance some of these results may change.

Introduction

This study began early 2015 and it is a pilot project aimed at evaluating the impact of a training program instituted by the Ministry of Human Resources and Emiratization (MOHRE) of the United Arab Emirates (UAE). Many large firms in the UAE operate in the construction sector and they recruit labor primarily from Asia (India, Pakistan, Bangladesh, Sri Lanka, and the Philippines). Typically, these firms interview and select qualified workers directly from the source country.

The Ministry instituted a novel feature to this recruitment process. On a pilot basis, workers receive training in their home countries in the skills needed by the firms in the UAE, in areas such as carpentry, masonry or steel fixing.

A natural question is what is the effectiveness or impact of this training program? That question is the purpose of this study. Five construction companies are involved in this pilot project. The companies are all in the construction sector and employ tens of thousands of workers. In this study, the companies recruit low skilled workers from India. The skills training is given to the workers after they have been selected by the firms. The goal of this study is to provide a statistical or quantitative measure of the impact of this skills training.

To get a good statistical test of the impact of this training, and also to prepare for other questions on the broader impact of migration on the workers, we have a special design for our statistical experiments. We will use the randomized control trials (RCT) methodology. In particular we perform two randomizations in our statistical experiment.

First, the firms interview workers who come to their job fairs in various cities in India. The firms identify those who are up to standard and those who are not. A typical part of the firms' processes involves over-sampling: the firms give offers to slightly more people than they need expecting some workers to decline or have visa issues before they are able to arrive in the UAE. In our experiment, we formalize this over-sampling and explicitly assign over-sampling probabilities to the firm. In particular, out of the pool that the firm says are qualified and with an eye to the numbers required by the firms, a computer-generated randomization takes place. The job offers are then randomly assigned to some of the workers based on the over-sampling probability. In particular, in the first randomization, the job offers are given randomly by a computer-generated algorithm to those among the qualified workers.

At this stage, there are therefore three types of workers. There are the REJECTED workers who are deemed unqualified for the position by the firms. Among those who are deemed qualified by the firms, a random subset of these will be SELECTED and offered jobs. The remaining workers from this pool are "RANDOMIZED OUT" – these are the people who are qualified but who do not get a job offer. It is important to note that there is a fixed number of jobs available. There will necessarily be qualified workers who do not get jobs. The randomization we are performing here is not reducing the number of jobs. Instead, it is assigning the fixed number of jobs available randomly among those who are qualified.

The skills training is only given to those who are in the SELECTED group mentioned above. The workers in this group are the only ones who have job offers in the UAE, so naturally should be the target of the training. To determine the impact of the training we perform our second randomization. Among those who are selected, one half of them are randomly chosen to receive the skills training. The other half do not receive the training.

The selected workers are then deployed in the UAE to begin their employment. Between six months and a year after the workers have arrived in the UAE, an assessment of the workers is performed. Each worker will be assessed on their knowledge of skills of their jobs, for which they were trained back in their country of origin. By comparing the assessment scores of the workers who received training in India and those who did not, we will be able to obtain a measure of the effectiveness of such training. As we show in the paper, there is preliminary evidence suggesting that the training was indeed effective.

Experimental Design
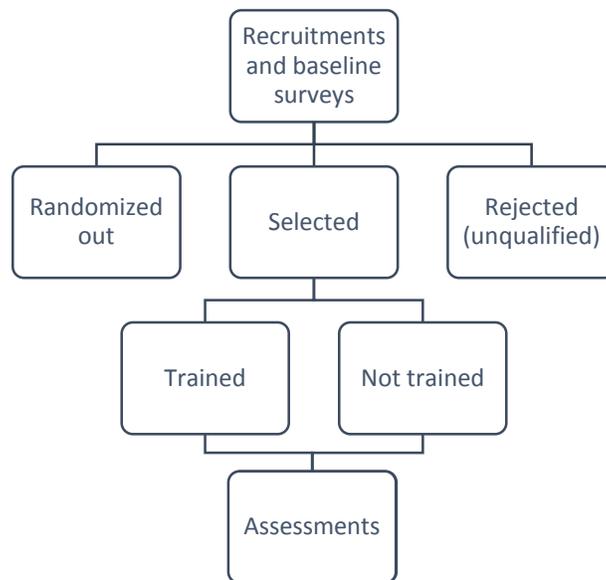
Figure 1. Scheme representing stages of the research design

Note: Follow-up surveys will be conducted for the subjects in all groups

The study follows an experimental design as illustrated above. Our initial pool of participants are workers in the country of origin who are seeking a job in the United Arab Emirates. All these subjects participate in a baseline survey, and subsequently divided into three different groups:

1- <u>Rejected (unqualified):</u> These workers fail to receive a job by the recruiting firm due to lack of qualifications.
2- <u>Selected (or randomized in):</u> These workers are randomly selected into the study and receive training assignments.
3- <u>Randomized out:</u> These workers are randomly selected out of the study. They do not receive training assignments.

First the UAE firms indicate those who are qualified to go to the next stage, with the remaining listed as "Rejected" because they are not qualified. Of those who are qualified, some are randomly chosen to receive the job offer – they are "selected" while the others do not – they are "randomized out".

Within the second group ("Selected"), workers are randomly assigned to be trained or not trained. The training program is held in NQA-accredited training centers in the country of origin. All the "Selected" workers undergo a skills assessment test after they have been deployed to the UAE.

Follow-up surveys are conducted with participants in all three groups six months to a year after their arrival in the UAE.

Recruitment and baseline survey

To date, five firms have been involved in the recruitment process of the workers in this study: Firm 1, Firm 2, Firm 3, Firm 4 and Firm 5.[1] These recruitment efforts have been taking place since 2014

In parallel to these recruitment drives, two phases of baseline surveys have taken place:

Phase 1: This phase included a total of 1178 workers (799 through Firm 1 and 379 through Firm 2). Due to logistical issues, the deployment of workers recruited through Firm 1 is delayed.

Phase 2: This phase included a total of 2920 workers (1296 through Firm 1, 97 trough Firm 3, 1153 through Firm 4 and 374 through Firm 5). These recruitments are projected to be completed by December 31st, 2016.

Below is a summary table of these two phases.

Table 1. Total number of workers by firm and phase

Phase I (Feb – Dec, 2015)		Phase II (Sep 2016 – today and ongoing)		Total: Phase 1 + Phase 2	
FIRM	**Number of workers**	**FIRM**	**Number of workers**	**FIRM**	**Number of workers**
Firm 1	799	Firm 1	1296[2]	Firm 1	2095
Firm 2	379	Firm 2	0	Firm 2	379
Firm 3	0	Firm 3	97[3]	Firm 3	97
Firm 4	0	Firm 4	1153[4]	Firm 4	1153
Firm 5	0	Firm 5	374	Firm 5	374
Total	**1178[5]**	**Total**	**2920**	**Total**	**4098**

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[1] Firm names were intentionally omitted in this report.
[2] 195 workers in this group are yet to be surveyed.
[3] These workers are yet to be surveyed.
[4] 211 workers in this group are to be surveyed.
[5] Out the 1178 workers in phase 1, a total of 909 participated in the baseline survey. The remaining 280 are part of the study but did not complete baseline surveys due to logistical issues.

Selection categories

Table 2. Total number of workers by firm and selection category

Firms	Selected	Randomized Out	Rejected	Other	Total
Firm 1	1389	397	267	42[6]	**2095**
Firm 2	102	33	6	238[7]	**379**
Firm 3	97	0	0	0	**97**
Firm 4	667	275	0	211[8]	**1153**
Firm 5	200	77	97	0	**374**
Total	**2455**	**782**	**370**	**491**	**4098**

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[6] 36 workers of Firm 1 were included in the project later on and did not complete the baseline survey/go through the first stage randomization. 6 were categorized as "Worker Decline".

[7] 238 workers from Firm 2 were included in the project later on and did not complete the baseline survey/go through the first stage randomization.

[8] These workers did not go through the first stage randomization due to logistical issues, but went through the second stage randomization.

Training versus Non-Training

The workers who are "Selected" have secured job offers and are deployed in the UAE. Half of the workers are randomly selected to receive training by the NQA-accredited training institution in India and the other half does not receive training. This is a 50:50 randomization, essentially done by the toss of a coin (computerized randomization).

A principal goal of this research is to determine whether those who are trained ultimately do better in the final places of employment and have higher producitivity levels relative to those who were not trained. The table below summarizes the training states that have been assigned to participants as of the date of this report:

Table 3. Total number of "Selected" workers by training category**

Firm	Trained	Not Trained	Total
Firm 1	703	705	1408*[9]
Firm 2	112	108	220[10]
Firm 3	48	49	97
Firm 4	107	104	211[11]
Firm 5	96	96	192
Total	1066	1062	2128

**The randomization of training assignments is still taking place for some of the workers, which explains the discrepancy between the total number of workers with training assignments and the total number of "Selected" workers.*

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[9] Some workers received training assignment, but did not go through the first stage randomization because of logistical issues. That is why the total number of people assigned with training or not is higher than the number of "Selected workers".

[10] Some workers received training assignment, but did not go through the first stage randomization because of logistical issues. That is why the total number of people assigned with training or not is higher than the number of "Selected workers."

[11] The training randomization is still ongoing for this group. That is why the total number of people assigned with training or not is lower than the number of "Selected workers.

Level Two Assessment by National Qualification Authority and Follow-up surveys

Table 4. NQA-Accredited Centers in Countries of Origin

Country	Name and Location of Training Centers
India	▪ Goodwill Jasone Skills & Assessments Private Limited (Chennai, India)
Pakistan	▪ Applied Technologies Institute (NLC, Mandra) ▪ Arfat Group of Tirocinium, (AGT) Institute of Technical and Professional Education (Rawalpindi) ▪ Construction Technology Training Institute, (Rawalpindi) ▪ Government College of Technology (Rasul Mandi Bhhauddi)
Sri Lanka	▪ None**

**As of August 2016, the official NQA accreditation of the Sri Lankan's training centers was still pending on the government's response to NQA requirements.

As of today, all survey and research activities have solely involved workers recruited from India.

Follow-up Surveys

To date, two sets of follow-up surveys involving a total of 699 participants have taken place, in India and in the UAE.

Follow-up surveys in UAE

The first round of follow-up surveys took place in Dubai, between September 27 and October 12, 2016. In total, 328 workers participated in this initial phase. A second phase of follow-up surveys is scheduled to take place in early 2017 (mid-January/early February); while a third round is planned for this coming summer (June-July 2017).

Table 5. Number of workers assessed and surveyed in the UAE by firm

DATE	FIRM	Assessment and Interview in UAE
September - October	FIRM 1	66
September - October	FIRM 2	262
TOTAL		328

Follow-up surveys in India

In India, 281 workers were surveyed since October 2016. Moreover, for 90 of the workers who could not be reached directly, close friends or relatives were surveyed instead. This amounts to a grand total of 371 data points as of now.

Assessments of Workers in the UAE

The first round of skills assessment was conducted in parallel with the first round of follow-up surveys (from September 27 to October 12, 2016). 326 workers were involved and the process was overseen by Aspiring Minds, the National Qualifications Authority, the Ministry of Human Resources and Emiratization (MOHRE) and the Qualification Conformity Council (QCC). The issuance of the first skills passport to sample workers is expected to begin within the next few weeks.

The assessment consisted of two main sections: a theoretical examination and a practical test.

Table 6. Percentage of workers assessed in UAE by occupation

Occupation	Percentage
Carpentry	34.04%
Masonry	17.18%
Steel fixing	48.77%

Summary of assessment results by occupation

Table 7: Average assessment scores among CARPENTERS

Section	Number of participants	Average score	Lowest score	Highest score	Maximum possible score
Theoretical	111	48.04	5	82.5	90
Practical	111	314.59	100	410	410
Total score	111	362.63	162.08	485	500

Table 8: Average assessment scores among MASON (BLOCK LAYERS)

Section	Number of participants	Average score	Lowest score	Highest score	Maximum possible score
Theoretical	42	27.68	0	60	65
Practical	42	222.08	0	300.01	335
Total score	42	249.75	32.5	340.01	400

Table 9: Average assessment scores among MASON (PLASTERERS)

Section	Number of participants	Average score	Lowest score	Highest score	Maximum possible score
Theoretical	14	31.96	5	55	80
Practical	14	226.34	113.74	307.5	320
Total score	14	258.3	163.74	345	400

Table 9: Average assessment scores among STELL FIXERS

Section	Number of participants	Average score	Lowest score	Highest score	Maximum possible score
Theoretical	159	41.26	7.5	82.5	85
Practical	159	333.60	0	415	415
Total score	159	374.86	45	490	500

Preliminary Results

The tables below contain some of the information collected during the two phases of baseline surveys in 2015 and 2016 in India.

Table 10. Demographic Information

Average age of sample	27.96 years
Religion	Hindu: 59.20%
	Islam: 11.87%
	Sikhism: 13.15%
	Christianity: 1.23%
	Other/unspecified: 14.54%
Languages spoken	Hindi: 41.82 %
	Tamil: 5.71%
	Bengali: 2.67%
	Other/unspecified: 49.8%

Table 11. Skills, income and expectations

Average expected length of stay in the UAE (years)	3.3 years
Average expected working days per week in the UAE	6.6 days
Expected occupation in the UAE	Carpentry: 20.97%
	Masonry: 22.79%
	Steel fixer: 15.32%
	Helper: 4.67%
	Other/unspecified: 36.25%

Comparing key characteristics across selection groups

Table 12. Share of workers in each education level in "Selected" and "Randomized out" groups vs. "Rejected" group

Highest level of schooling completed	SELECTED & RANDOMIZED OUT	REJECTED
No Education	4.18%	12.04%
Pre-School	6.47%	4.74%
Primary School	35.18%	9.12&
High School	20.89%	11.68%
Higher Secondary School	8.36%	-
College	0.32%	-
Vocational Training	0.20%	-
Others/Unspecified	24.32%	62.41%

The level of education is overall higher among workers who were "SELECTED" or "Randomly Rejected". Over 75% of workers in the "Selected" and "Randomly rejected" groups completed up to a higher secondary school education; against only 38% in the "REJECTED" pool.

Table 12. Average income levels and expectations by selection group

	SELECTED	RANDOMIZED OUT	REJECTED
Average income in the previous year (USD)	$ 1,698.69	$ 1,669.0	$1,752.55
Average expected earnings in the UAE (first 12 months) (USD)	$4,303.79	$3,910.73	$3,228.46

Table 13. Average expected length of stay and number of working days in the UAE by selection group

	SELECTED	RANDOMIZED OUT	REJECTED
Expected length of stay in the UAE (years)	3.10	3.22	3.82
Expected number of working days per week in the UAE	6.58	6.57	6.70

"Selected" workers had income levels that were similar to that of their "Rejected" counterparts. However, on average, "Selected" workers expect to earn more, work less and stay in the UAE for a shorter period of time than the 'Rejected" workers. These measures could indicate information

regarding self-perception of skills. All things being equal, a more skilled worker would have to work less than a less skilled worker in order to have the same amount of earnings.

Impact of training on assessments

Table 14. Average assessment score by training category

	Not trained	**Trained**
Average assessment score	345.24	349.31

Note: Maximum possible score varies by occupation between 400 and 500.

Workers who received training and were deployed to the UAE within a year of the assessment period performed better than those who were deployed around the same period but did not receive training.

Table 15. Average assessment score by occupation and training category

Training category	**Occupation**			
	Carpenter	**Mason-Block layer**	**Mason-Plasterer**	**Steel fixer**
Trained	364.51	221.56	272.08	371.18
Not trained	357.51	259.95	251.66	374.16
Maximum possible score	500	400	400	500

A regression analysis is used to judge the preliminary impact of the training program on the workers' performance in the assessment. The simple regression equation is as follows:

$$Total\ Assessment\ Score = \alpha + \beta Training + \gamma DateDifference + \in$$

Where α is a constant, Training is a categorical variable that equals 0 if worker is not trained and 1 if the worker is trained, and DateDifference represents the difference in days between date of assessment and date of arrival in the UAE. $\in$ is an error term.

Table 16. Regression coefficients for the effect of training randomization on assessment score

Total Assessment Score (Outcome variable)	Coefficient	Standard Error	t-score	P>t
Difference between assessment date and arrival in days	0.405308	0.079769	5.08	0.0
Training category (dummy)	**18.93039**	10.43495	1.81	0.071
Constant	203.5687	29.40188	6.92	0

The results obtained through the regression analysis suggest that there is a positive effect of the training program on the performance during the assessment. Indeed, receiving training increases the expected assessment score by almost 20 points, controlling for the duration between the deployment date and the assessment date. This effect is positive and statistically significant. Similar results are obtained when including controls for workers' occupations.

Conclusion

As stated in the introduction, this is a very preliminary report on a very innovative project piloted by the UAE ministry of human resources and Emiritization (MOHRE).   The goal of this research is to assess the impact of a training programming for skilled workers in India who are being recruited to work in construction companies in the UAE. This report has indicated the experimental design and the numbers of workers interviewed at very stages of the design.   The results are preliminary as more data is forthcoming and further statistical work and economic analysis is needed.   The preliminary results however suggest that there may be a positive and significant impact of the training on the productivity of the workers.