

Innovation, Entrepreneurship and the Indian IT industry: productivity gains from reducing attrition amongst skilled migrants

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The emergence of entrepreneurial technology firms in countries like India has been enabled by the supply of large numbers of skilled individuals with low opportunity costs (Arora et al. 2001). However over time, the rising demand for skills has also led to labor shortages. With turnover rates in excess of 20%, more than half of the 100 technology firms surveyed by Arora et al. (2000) indicated labor shortages as the biggest problem they face. The labor market for skilled professionals is made even tighter as a result of a large number of young people living in remote areas where there are physical and informational barriers to hiring (Jensen, 2010). As Choudhury and Khanna (2014) document, this creates opportunities for firms with nationwide hiring practices to catalyze skilled migration. However, migrants who end up working further from their home village leave the company at higher rates than those who work closer to home. This leads to a relatively understudied question – what policy measures could be adopted to *retain* migrants in the longer term and enhance the productivity of high-growth entrepreneurial firms?

The researchers plan to conduct a randomized control trial that involves skilled migrants working at INDTECH, one of India's largest technology firms employing over 120,000 employees spread over 10 production centers in India and working on global projects. One of the key features of the program is the unique worker allocation scheme implemented by INDTECH. After completing training, the human resources department of this firm randomly allocates the lowest 80% of trainees to one of 10 centers (the top 20% choose their location of work). Because workers are randomly assigned to workplaces this is a very appealing setting to study the determinants of attrition and how they relate to migration: we can examine and implement experimental studies of attrition of migrant workers avoiding the complex selection issues that arise when migrants choose their destination. The project will have broader impacts in

understanding how firms and entrepreneurs in India can adapt to utilizing and retaining a skilled and mobile labor force.

There is a long standing literature in economics dating back to Sjaastad (1962) that sets up the decision of migration from the home region to the host region based on the utility and costs of migration. Individuals chose to migrate if the utility of migration, net of the costs of migration is greater than the utility of not migrating. Costs of migration include both financial costs as well as non-financial *psychic* costs of moving far away from family and friends. If there is uncertainty about migration costs, the model also predicts that return migration will be driven by the same factors: if a migrant finds that the costs associated with being away from home are higher than they expected, they may migrate back. However, evidence on the components of migration costs is sparse: Atkin (2014) shows that Indian migrants incur a cost of consumption by continuing to consume the types of food where they come from when they migrate and would consume 7% more calories if adjusted food to local types. Other studies show that some of the migration costs are explained by access to roads reducing travel time (Morten and Oliveira, 2014), or the presence of cellphones allowing communication with family and friends (Aker et al, 2011). However, the literature on what policy measures could be adopted to mitigate the psychic costs of migration is very thin. Additionally, a key empirical challenge is to address the inherent selection problem in migration: both the selection of which people migrate, and the selection of the migration destination. Arguably systematic measures to reduce psychic costs of migrants could affect both productivity and attrition of skilled migrants.

The researchers have already held preliminary discussions with senior managers of the training facility and plan to roll-out a randomized controlled trial to study migration retention and productivity. We will randomize offering migrants travel vouchers and face-time with managers. We plan to study the effect of reducing the psychic costs of migration by reducing the travel costs to visit family members through travel vouchers on retention and productivity at the firm. To do this, we plan to measure productivity, attrition and employee satisfaction for both the treated and control groups, before and after treatment. A key part of the research design will be to track any migrants who leave the firm during the course of their study.