# Measuring skills in Myanmar's garment sector

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- Since skills can be upgraded by training, learning about the relationship between skills and economic outcomes can have direct implications for policymaking.

- The authors developed a method to measure sewing skills of garment sector workers and collected this data by conducting a large-scale survey in Myanmar.

- The study finds that occupational skill is an important determinant of workers' earning. This is true even after taking into account factors such as human capital, experience in the sector, job tenure, age, education, and skill grades given by the factory.

- In particular, the notion of multi-tasking operations as a skill measure robustly explains earning the most.

- These findings raise a key policy implication to support the importance of providing job training opportunities.

## Introduction

It is widely believed that workers' skills are important determinants of economic outcomes such as their earnings and firm performance. Since skills can be potentially upgraded by training, learning about the relationship between skills and economic outcomes can have direct implications for policymaking. A key challenge for learning about this relationship, however, is the difficulty to measure and to compare skills across workers, firms, and countries. Even if we focus on a single industry, tasks performed by workers are typically complex and difficult to be compared across workers. How can one say "worker A is more skilled than worker B" if they are engaged in multiple different tasks for producing different products?

## Methodology

We developed a method to measure sewing skills of garment sector workers and collected such data by conducting a large-scale survey in Myanmar. First, we develop a survey-based protocol to measure skills of garment workers in the sewing section. We choose the garment sector since the types of operations and machines for a given product are relatively standardized. Further, each operation is assigned a universal measure of complexity, allowing for accurate complexity-adjusted efficiency measurement. In addition, the garment sector is a key export-oriented industry in many developing countries. Our method can be extended it to other countries to compare skills of garment workers producing the same products and brands across countries.

Development of the skill measurement protocol needed the help of industrial engineers who are experts on apparel production. In our skill measurement protocol, each worker is asked to choose up to three types of machines and up to three types of products that they have worked on most often in the past 3 months. Then, for each machine and product type that the worker indicated, the worker is asked to select up to five operations that the worker spent the most time working on. Lastly, for each operation indicated by the worker, the worker is asked the number of pieces that they can produce in one hour assuming no production interruptions.

Our skill measure protocol provides us with information on both efficiency of a given sewing operation and on the variety of operations that the worker performs. Here, efficiency is defined as the number of pieces that the worker can produce per unit of time for a given operation. We use a global database on sewing operation complexity to standardize efficiency of each operation in order to calculate an aggregated efficiency measure for each worker by taking the average of operation-level efficiency across all operations that the worker

performs. Due to standardization, this measure can be compared across workers.

In addition, our protocol also informs us about the variety of operations - the number of operations that the worker performs in the factory. Depending on firms' operational settings, both measures of worker capacity can be important. For instance, in factories that confront with high absenteeism, workers who can perform multiple tasks could be valuable for replace absent workers. To take into account for such multi-tasking ability, we can alternatively define an aggregated efficiency measure for each worker by assuming that the worker has zero efficiency in operations that she did not report. In this alternatively measure, workers who perform more tasks tend to have higher aggregated efficiency measure.

We apply this protocol to measure skills of garments workers in a survey of garment workers in Myanmar from December 2019 to March 2020. The survey was conducted with workers in factories that have a union affiliated to the Confederation of Trade Unions in Myanmar (CTUM). 17 factories in Yangon region fully completed the data collection activities and 19 partially completed them. We invited both union and non-union workers who were randomly selected in these factories, and 916 workers participated the survey (61% take-up rate).

## Findings and policy implications

Based on our skill measures in the Myanmar garment sector, we find that occupational skill is indeed an important determinant of workers' earning. This is true even after taking into account for other factors of human capital, including one's experience in the sector, job tenure, age, education, skill grades given by the factory. In particular, our skill measures incorporating the notion of multi-tasking of operations robustly explain earning the most.

Our findings highlight the importance of workers' skills as a determinant of earning and productivity in the garment sector in Myanmar. Unlike cognitive skills and innate ability, which are considered to be formed mostly by parental and school-based education, these types of occupational skills can be upgraded by on-the-job or off-the-job training. In the Myanmar garment sector, however, we find that only 25% of workers report receiving any in-house skills training, and only 35% of workers report participating in any skills training prior to beginning work in the garment sector. These findings raise a key policy implication to support the importance of providing job training opportunities. Employers may opt not to invest in this type of training because it is lost when a worker moves to a new job. Therefore, public funding of general sewing skills training programs may be merited.