Increasing Firm Productivity through Management Consulting Services in India

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Differences in productivity between firms, which are especially large in developing countries, are often attributed to the quality of their management practices. Researchers tested the effect of management practices by randomly assigning some Indian textile firms to receive free consulting advice. Firms that received this advice significantly raised their productivity within a year, resulting in an estimated increase in annual profits of US$325,000.

Policy issue

Policymakers have long puzzled over why there are such significant differences in productivity across countries, and even across firms within an individual country. These differences in productivity, or the ratio of production output to required inputs (capital, labor, land, energy, materials, etc.), are often attributed to variations in management practices. While the phenomenon of management can be complex and difficult to measure, recent research has focused on specific management practices which can be measured, taught in business school, and recommended by consultants. Examples of these practices include quality control procedures, inventory management, and certain human resources management practices. A growing body of literature has found a strong association between these practices and higher productivity and profitability. However, such correlations may be potentially misleading. For example, profitable firms may simply find it easier to adopt better management practices. Rigorous experimental evidence is needed to tease out the importance of management practices for large firms.

Context of the evaluation

Despite India's rapid growth in the past two decades, total factor productivity (the efficiency and effectiveness with which inputssuch as buildings, machinery, and laborare jointly used for the output of goods and services) in India is about 40 percent of that in the United States. This may be related to the poor management of many Indian firms, which do not tend to collect and analyze data systematically, set and monitor clear targets for performance, or explicitly link employees' pay or promotion with their performance.

The textile industry is the largest manufacturing industry in India, accounting for 22 percent of manufacturing employment. The textile firms in this study had, on average, about 270 employees, assets of US$13 million, and sales of US$7.5 million a year. The firms were large manufacturing firms; they were in the top 1 percent by both employment and sales relative to other Indian manufacturing firms. They were also complex organizations, with several different factory sites, each of which included several multistory buildings operating 24 hours a day, 365 days a year. The factory floors were often dirty and disorganized, and their yarn and spare parts inventory stores frequently lacked any formalized storage systems. This disorganized production led to frequent quality defects (oil stains, broken threads, wrong colors, etc.) necessitating an extensive checking and mending process that employed 19 percent of the factory manpower, on average.



Factory worker in India

Details of the intervention

Researchers partnered with an international consulting group to provide free consulting on management practices to randomly chosen Indian textile plants, and then used a randomized evaluation to evaluate whether the improvements in management generated by the consulting affected firm performance.

In 2008, 17 large textile firms around Mumbai, which had a total of 28 plants among them, were randomly divided into either a treatment group, which received free consulting, or a comparison group, which did not. The consultancy had three phases. In the first phase, the consultants evaluated the current management practices of the plants of all firms, both treatment and comparison. Within each plant, the consultants also set up processes to measure a range of plant-level metricssuch as output, efficiency, quality, inventory, and energy useon an ongoing basis. These metrics were then combined with existing records to create a performance database. At the end of the diagnostic phase, the consulting firm provided each plant with a detailed analysis of its current management practices and performance, and recommendations for change. In total, this phase involved about 15 days of consulting time per plant over the course of a month.

In the second phase, the consulting firm followed up on the diagnostic report with only the plants belonging to the 11 treatment firms. Over the course of four months, the consultants worked with each plant to help introduce key management practices, such as keeping the factory floor tidy to reduce accidents and facilitate movement of material, recording quality problems by type and analyzing the records daily to address the defects, and performance-based incentive systems for workers and managers. In total, the consultants identified 38 key practices on which to focus, all of which were based on basic manufacturing principles that are standard in U.S., European, and Japanese firms. This phase involved about 15 days a month of consulting time per plant.

In the third phase, in return for allowing continued collection of performance and management data, the consultants provided light consulting advice (in total about 1.5 days per month per plant) to both the treatment and control plants.

Results and policy lessons

The four-month consulting treatment led to significant improvements in quality, inventory, and output. Treatment plants saw a 9.4 percent increase in output, which was driven by a number of changes. There was a roughly 50 percent reduction in quality defects, a reduction in machine downtime due to more routine maintenance, and greater worker efficiency and attendance due to the introduction of incentive schemes. Within the first year, productivity in treatment plants increased by 16.6 percent. Based on these changes, researchers estimate a total increase in profits of around US$325,000 per treatment plant per year. Better management also allowed treatment firms to open more production plants in the three years following the start of the experiment than comparison firms.

Given the large estimated impact of modern management practices, a natural question is why firms had not previously adopted these practices. The evidence, though speculative, suggests that informational constraints were the most important factor. Firms that did not employ simple, already widespread practices, like the measurement of quality defects, machine downtime, and inventory, apparently did not believe that the practices would not improve profits. For less common practices, like daily factory meetings, standardized operating procedures, or inventory control norms, firms were often simply unaware that these practices existed.



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