# Does Management Matter? Evidence From India

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A long-standing question is whether differences in management practices across firms can explain differences in productivity, especially in developing countries where these spreads appear particularly large. A randomized controlled trial with large textile firms in India found that adopting improved management practices raised productivity by 17% in the first year through improved quality and efficiency and reduced inventory, and within three years led to the opening of more production plants.

A pervasive feature of manufacturing and other industries is that there are large productivity differences across firms and countries. Different firms, and different plants within the same firm, turn similar amounts of measured capital and labor into very different amounts of output. Because productivity is the ultimate driver of long-run economic growth, this puzzle has attracted the attention of many economists.

One explanation is that productivity differences partly reflect the quality of management. Management quality is notoriously hard to measure. Earlier research made a start by constructing measures of management practices across thousands of firms worldwide. This research highlighted, for example, the "management gap" between the U.S., Japan, and countries such as India. This gap in turn mirrors the cross-country differences in productivity that have been documented extensively by economists. In addition, there is considerable variation in management within countries (Figure 2) that also mirrors the productivity spread within countries.

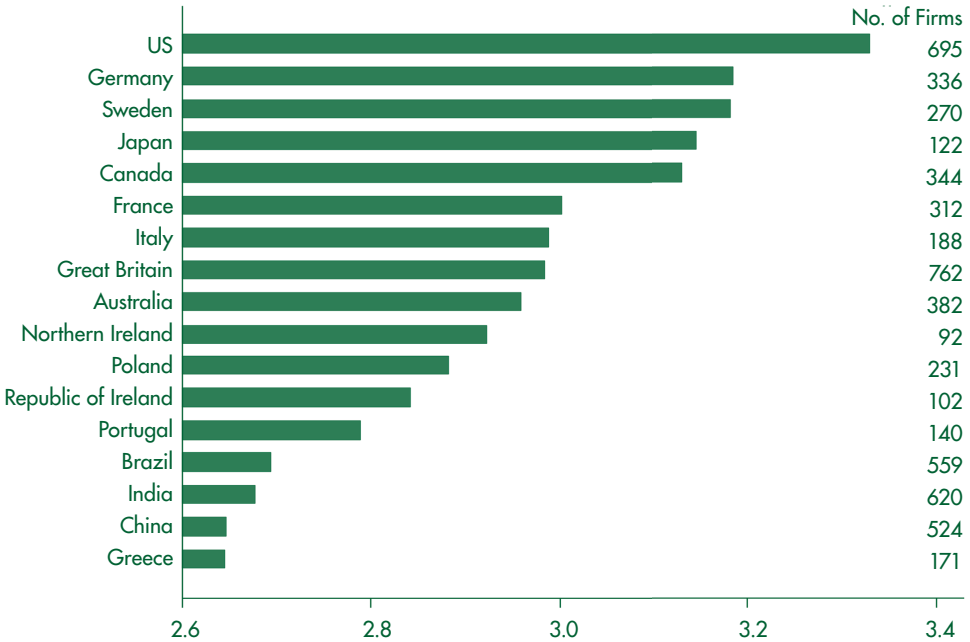
The gold standard for establishing causality, however, is the randomized experiment. Can management be studied by randomized trial? A group of economists (including Aprajit Mahajan, now at ARE) teamed up with a major consulting firm to give it a try.

The team selected 20 large Indian textile plants. Fourteen were randomly assigned to receive intensive guidance on management practices while the remainder were designated as a control group. One of the first things they observed was the chaotic nature of many of the Indian factories. Many firms had dirt and garbage on the factory floors. Inventories and spare parts were scattered all around the site, and there was typically no systematic quality control

The consultants introduced operational practices that are standard in U.S. and Japanese factories. They persuaded firms to measure inventories, quality defects, and production efficiency, and to organize daily meetings to assess the data. With these basic steps in place, repeated defects were swiftly identified and eliminated. Inventories were trimmed from several months to a few weeks. Machine breakdowns were analyzed to understand and then fix their root cause. Productivity at the treated plants rapidly rose by 17% and the researchers estimate that annual profits rose by about $325,000.

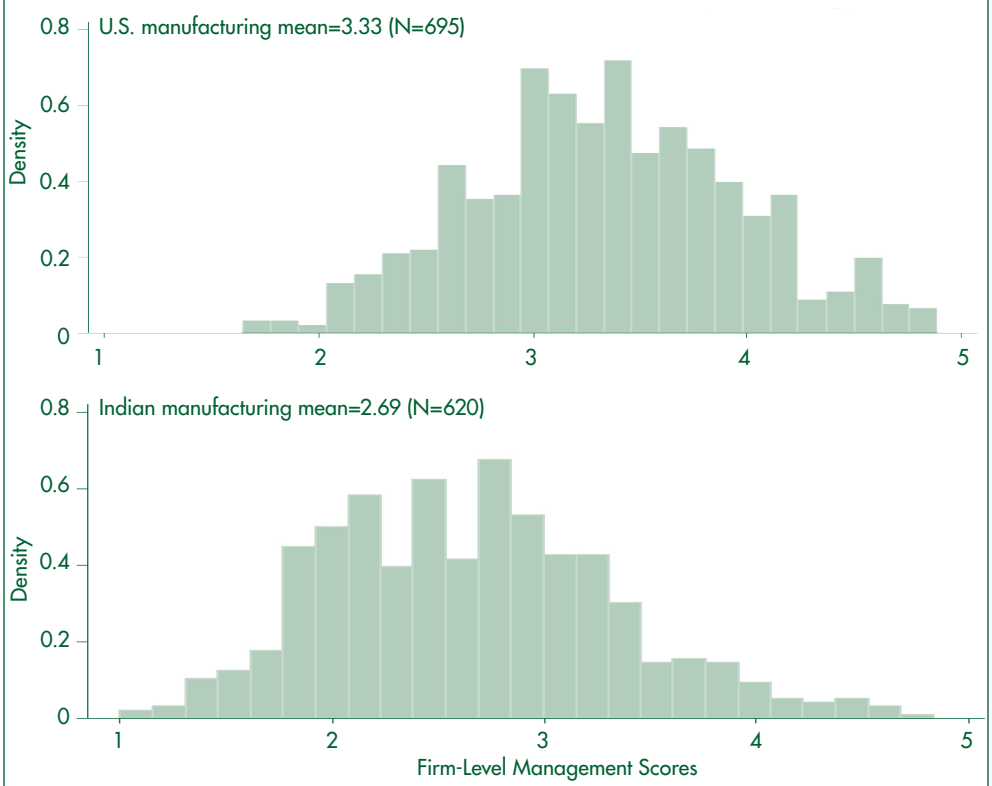
The study raises some obvious questions. First, why hadn't these practices been adopted before? The researchers advance several explanations. First, for somewhat common management practices, the major initial barrier to adoption was that firms had heard of the practices but thought they would not be profitable to adopt. For example, many of the firms were aware of preventive maintenance, but few of them thought it was worth doing. They preferred to keep their machines in operation until

Figure 1. Management Appears Worse in Developing Countries




*Average country management score, manufacturing firms 100 to 5,000 employees*
*(Monitoring, targets and incentives management scored on a 1 to 5 scale*
*Methodology: Bloom & Van Reenen (2007, QJE), Data: Bloom, Sadun & Van Reenen (2010, AR)*

Figure 2. India's Low Score Is Due to a Tail of Badly Managed Firms




*Firm-level histograms underlying the county averages*

they broke down, and then repair them. This accounted for slightly over 45% of the initial non-adoption of practices.

Second, for the uncommon practices, the major initial barrier to the adoption was a lack of information about their existence. Firms were simply not aware of these practices. These practices included daily quality, efficiency and inventory review meetings, posting standard operating procedures, and having visual aids around the factory. Many of these are derived from the Japanese-inspired lean manufacturing revolution and are now standard across North America, Japan, and northern Europe but not in developing countries.

Third, as the intervention progressed, the lack of information constraint on the uncommon practices was rapidly overcome in both treatment and control firms. It was easy to explain the existence of the uncommon management practices, so the non-adoption rates of these practices fell relatively rapidly.

Fourth, the incorrect information constraints were harder to address because the owners often had strong prior beliefs about the efficacy of a practice, and it took time to change these. This was often done using pilot changes on a few machines in the plant or with evidence from other plants in the experiment. For example, the consultants typically started by persuading the managers to undertake preventive maintenance on a set of trial machines, and once it was proven successful, it was rolled out to the rest of the factory.

Fifth, once the informational constraints were addressed, other constraints arose. For example, even if the owners became convinced of the need to adopt a practice, they would often take several months to do so. A major reason is that the owners were severely time constrained, working an average of 68 hours per week already.

A related question is why product market competition didn't drive the badly managed firms out of business? A variety of factors may be at work. In the experimental study, the senior management positions in all the firms are held by the owning family. The owner of one of the best-managed firms offered a simple explanation for why he could not expand: "no sons, no brothers." If the expansion of well-managed firms is limited, and entry into the market restricted by credit constraints, import tariffs or other factors, low productivity firms may persist.

Finally, what are the implications of this for public policy? The research does support some of the common recommendations to improve productivity, like increasing competition (both from domestic firms and multinationals) and improving the rule of law. Our results also suggest that firms were not implementing best practices on their own in part because of lack of information and knowledge. This suggests that training programs for basic operations management, like inventory and quality control, could be helpful, as would demonstration projects.

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## For additional information, the authors recommend:

Bloom, N., B. Eifert, A. Mahajan, D. McKenzie and J. Roberts. 2013. "Does Management Matter? Evidence from India" *Quarterly Journal of Economics* 128(1):1-51. www. are.berkeley.edu/~aprajit/DMM.pdf