Pakistan’s football factories score goal for innovation

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Pakistan’s football-making industry is benefitting from a new technology which allows balls to be made more efficiently, thanks to research funded by the International Growth Centre (IGC), based at LSE.

Researchers found a new way to cut the footballs’ pentagon panels from sheets of an artificial leather, rexine – the most costly input into football production. The researchers gave the new technology out to football companies randomly and watched how they reacted. This allowed the researchers to see what issues prevent firms adopting new technologies that could improve their businesses.

Football manufacturers were provided with a new cutting pattern – based on the mathematically best way of fitting pentagon shapes on a flat surface – and new cutting tools, or *dies*, to implement the new design. Skilled cutters were able to increase the number of pentagon panels per rexine sheet by between 10 -24. This leads, on average, to about a one per cent reduction in total production costs.

One of the researchers, Professor Eric Verhoogen, Associate Professor of Economics and International Affairs at Columbia University, said: “A one per cent cost reduction might sound like a small saving but this is significant in an industry with margins of only about 10 per cent.”

Another researcher, Shamyla Chaudry, Assistant Professor of Economics and Business Administration at the Lahore School of Economics, said: “This is going to mean more exports for the country because these companies are going to be more competitive.”

In May 2012, the researchers randomly allocated the new technology to 35 of the 135 football firms in Sialkot, Pakistan, the world capital of hand-stitched football production. While one of the largest companies in the city quickly adopted the new technology for almost all its production, puzzlingly few others followed suit. Based on further investigation, the researchers conjectured that take-up was slow because employees were resisting the new technology. Cutters were paid per piece, with no incentive to reduce waste, and were concerned that the new die would slow them down and reduce their incomes.

To investigate this idea, the researchers offered workers at half of the firms that had originally received the new die a lump sum of a month’s salary if, within one month, they could demonstrate that they could use it competently. Half of the firms that accepted this incentive subsequently adopted the new die.

Professor Verhoogen said, “Incentives for workers may be different from incentives for owners, and workers have to have an expectation that they are going to share in the gains from innovation in order for innovation to be successful.”

Azam Chaudhry, one of the researchers and Professor of Economics at the Lahore School of Economics, said: “Just one innovation in one sector can have incredible ripple effects. People’s salaries improve, education levels can go up and the quality of living can go up. Workers can be excited by new technology if you can create a situation where they feel they won’t lose out.”

Professor Jonathan Leape, Executive Director of the IGC, said: “Innovation is key to improving livelihoods across the developing world. Economists can help understand the barriers that prevent ‘a good idea catching on’ and work with policy makers to overcome these challenges.”