Firms' decisions about whom to hire and fire have big effects, not only on their own bottom line but also on the functioning of the labour market and the performance of the whole economy. Analysis of Brazilian data by **Daniela Scur** and colleagues demonstrates the value of 'structured management practices' for better quality recruitment and retention – and improved productivity.

Structured management: how firms can hire and keep the best people

Total factor productivity (TFP) is a measure used by economists and business people to quantify the productivity of firms and economies. In essence, it measures the efficiency and intensity of use of inputs to production, such as capital and labour. Technology affects how these inputs are assembled, and we can look at technology either as tangible (new and better machines) or intangible (such as production processes and management practices).

One important way in which intangible technologies affect firms' TFP performance is by improving managers' ability to build the most productive and appropriate workforce that they can. We know that more structured management practices lead to higher productivity (Bloom et al, 2013); we also know that hiring higher quality workers is correlated with higher productivity (Bender et al, 2018).

But specifically, how is this all happening? What levers are firms pulling to get this optimal mix of workers in their firm?

Economic models of the labour market analyse different firms trying optimally to attract workers with different levels of ability, but they often do not take account

Firms with structured management practices hire better, retain better and fire more selectively of specialised investments in management processes or managerial talent. The models abstract away from real-world differences in the personnel management practices of different firms, but we do not yet know how much those differences matter and why. Our research digs deeper into that 'black box' and shows how firms with structured management are better at hiring, firing and retaining workers.

Drilling down into these practices is a very data-intensive exercise. To document these intricate relationships, we need a dataset that includes all the job spells of paid employees in an economy, including their wages and occupations, and also a lot of information at the firm level, including industry, productivity and use of different management practices.

It is very hard to find this data except for a select few countries. We have created the most comprehensive dataset of this kind to date, using three different data sources from Brazil: the employer-employee matched dataset covering the entire formal sector for 10 years; the annual industrial survey for productivity data; and the World Management Survey (WMS) for management practices data.

The Brazilian dataset uniquely allows us to observe the occupation of workers, as well as the reason for separation. Since most other employer-employee datasets show workers moving across jobs, without knowing the reason for separation, we would not be able to identify whether the worker left on their own or whether they were fired.

Furthermore, without detailed occupation codes, we would not be able to separate managers from production workers, which we find important in understanding the compositional relationship. As our dataset has these important variables, we can take a new look at what is going on in these firms.

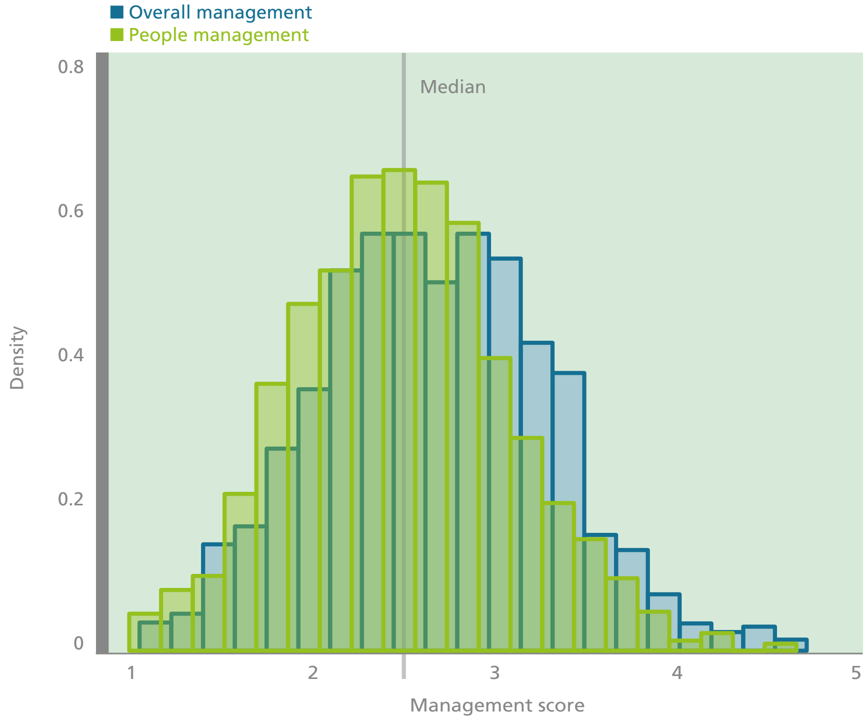
We start by defining firms that have structured management practices as those registering over a score of 3 in the WMS grid of 1 to 5. Methodologically, that is the cut-off point in the survey: firms that have some management practices but where the practices are informal and only adhered to sometimes (usually requiring the manager to be present) cannot reach a score of 3. For a 3 to be awarded, the processes described must be formalised, though they are allowed to have some weaknesses.

We find that there is plenty of variation among firms in the Brazilian sample of the WMS (see Figure 1). Half of the firms score above a 2.66, with the other half scoring below that score. While we can replicate the results using a continuous definition of management, the WMS definitions offer a cleaner way to distinguish and interpret our results.

We then use a well-known methodology (Abowd et al, 1999) to extract two 'fixed effects' from the data on employee flows and wages: Essentially, this methodology uses the transitions of workers between jobs within and across firms to allow us first, to estimate how much more a worker gets paid moving from firm A to firm B (the 'firm-fixed effect'); and second, to estimate what the value of a particular worker's portable skills are across jobs. Portable skills refer to the traits and skills of workers that have some value in the labour market, and which they carry with them as they move between firms (the 'person-fixed effect').

We extract these two fixed effects for all firms and workers in the Brazilian sample, we then rank all production workers and managers separately by their fixed effect and see where they work: in firms with structured management or unstructured management. Our main results are summarised in Figures 2 to 4.

Figure 1:
Distribution of management scores



Note: Data from WMS Brazil only, 2008 and 2013.

Hiring the best people

Firms with structured management practices do a better job at hiring the 'best' people – that is, people with the highest 'person-fixed effects'. The median manager hired in a firm with structured management practices comes from above the median ranking in the full distribution (58th percentile), while the median manager hired in a firm with unstructured management practices comes from below the median ranking in the full distribution (46th percentile).

Firms that are better at hiring tend to have better job matches and generally need to fire fewer workers

Figure 2 summarises this relationship. If all firms hired at random, both curves would be along the 45-degree line. The bulging to the right means that structured firms have positive recruitment (that is, they are hiring from higher ends of the distribution), while the bulging to the left means unstructured firms have negative recruitment (they are hiring from the lower ends of the distribution).

Retaining the best people

Once the firms with structured management hire the best workers, they are also better at keeping them over time. Figure 3 highlights the share of workers from the top and bottom of the rank distribution that work in structured and unstructured firms over our 10 years of data. It is striking that firms with structured management practices consistently retain a much larger share of workers in the top quantile of the worker quality distribution.

Selective firing

We also look at how firms let go of workers. In Figure 4, we see two very clear patterns in the data: the first is that firms with structured management have lower levels of firing. One likely reason is that firms that are better at hiring tend to have better job matches in the first place and thus, generally need to fire fewer workers.

Another clear pattern is that when these firms do fire, they are more selective: that is, firms are more likely to dismiss

Figure 2:
Structured management firms are better at hiring workers

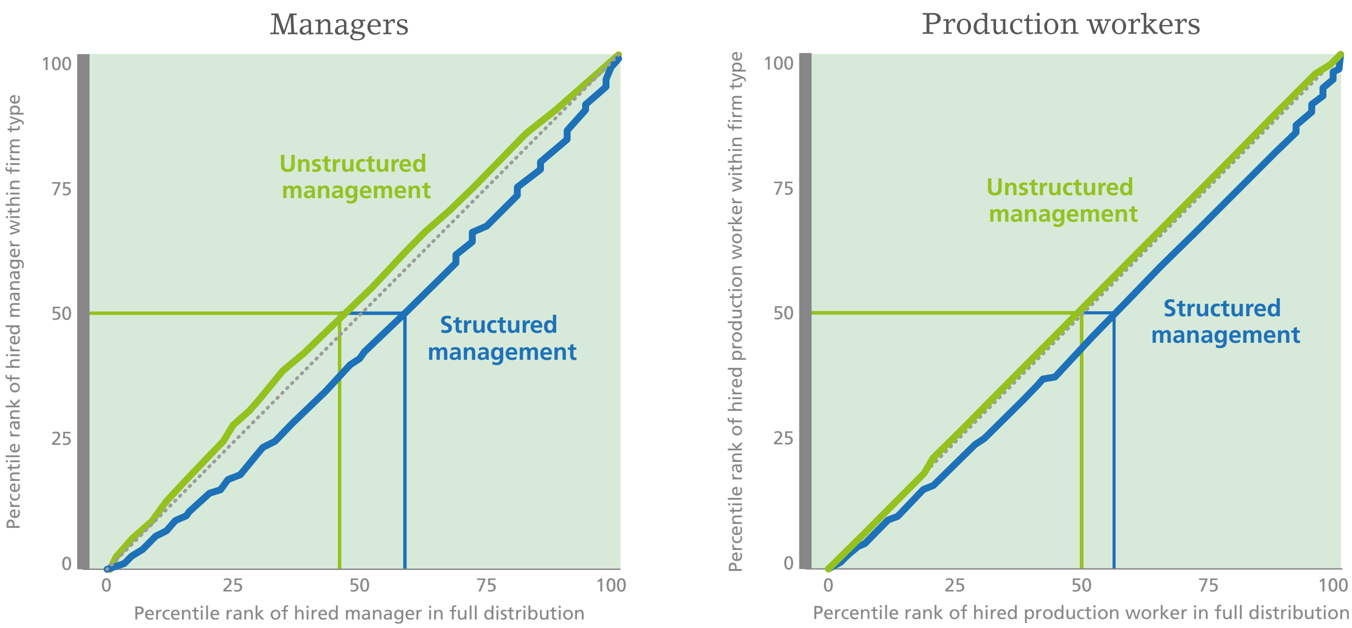


Figure 3:
Structured management firms are better at retaining top workers

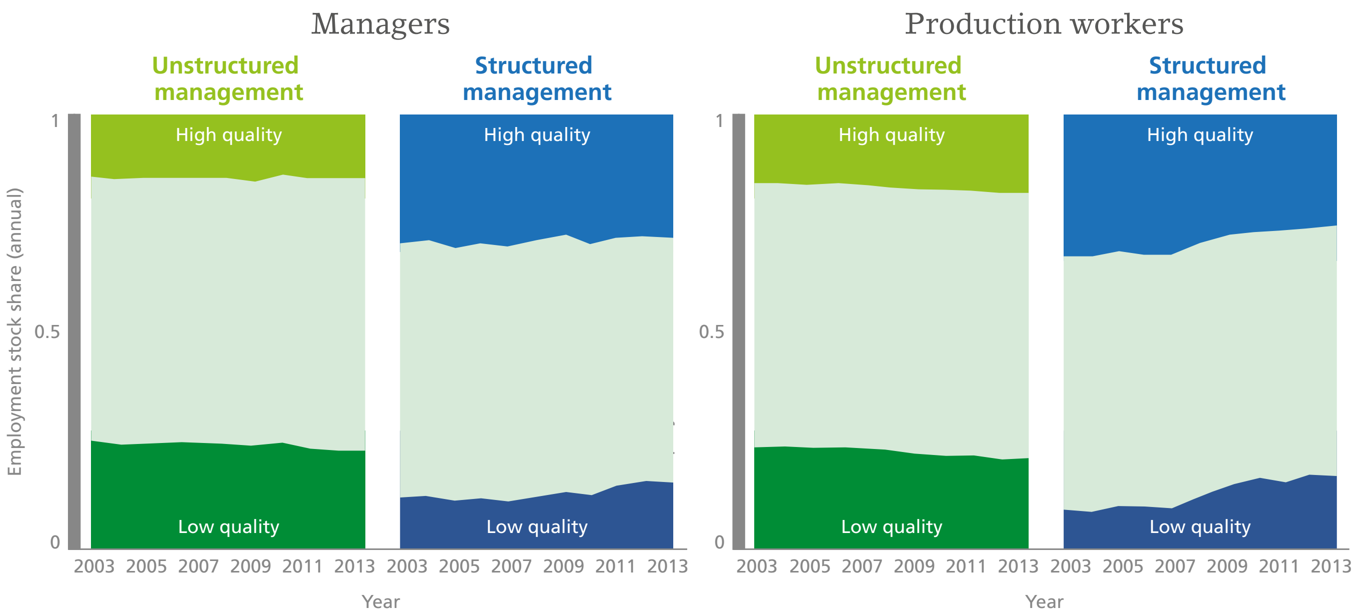
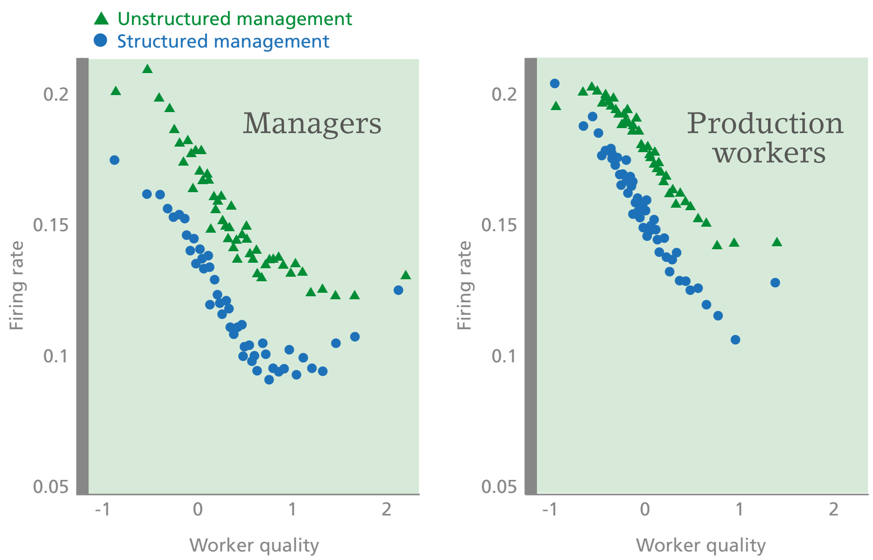


Figure 4:
Structured management firms fire less often, and more selectively



More structured management practices have a strong positive effect on firm productivity

workers with lower person-fixed effects relative to unstructured firms. This suggests that they are more able to identify lower quality workers.

Managing people and operations

To summarise, we find evidence that firms with more structured practices hire better, retain better and fire less (and more selectively). So what types of business practices are more strongly correlated with having employees of higher quality?

We find that people management practices are correlated with better production workers at the firm, but both operations and people management practices are correlated with better managers at the firm. This was surprising to us, but it is quite intuitive. To explore this, we looked separately at the relationship between higher levels of structured management in people management practices and in operations management practices.

One potential explanation that fits these results is that people management practices are primarily geared at production workers, so it makes sense that these practices would be more strongly correlated with workers in that occupation. Operations management, on the other hand, could make firms more attractive to better managers or the better managers could be implementing a large set of better operations and people management practices. It is hard to know which way the causality runs, but this is the first time that we see these types of patterns so clearly in the data.

All in all, it is now an accepted stylised fact that more structured management practices have a strong positive effect on firm productivity, though we are still unpacking the black box of why that relationship exists. We see this set of stylised facts as the first step in an exciting research agenda exploring the labour aspect of this relationship.

A whole new set of questions arise based on these patterns, such as whether structured management helps firms mitigate unhelpful management biases, whether they are more able to optimise their 'internal labour markets' or whether these firms can improve the human capital of their workers.

Both operations and people management practices are correlated with better managers at a firm

This article summarises 'Building a Productive Workforce: The Role of Structured Management Practices' by Christopher Cornwell, Ian Schmutte and Daniela Scur, CEP Discussion Paper No. 1644 (http://cep.lse.ac.uk/pubs/download/dp1644.pdf).

Christopher Cornwell and **Ian Schmutte** are at the University of Georgia. **Daniela Scur** of Cornell University is a research associate in CEP's growth programme.

Further reading

John Abowd, Francis Kramarz and David Margolis (1999) 'High Wage Workers and High Wage Firms', *Econometrica* 67(2): 251-333.

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