Management Matters:

MANUFACTURING REPORT

2023

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LETTER TO THE MANAGERS

Dear Manager,

We would like to extend our sincerest gratitude for taking the time to help us with this important research project.

The World Management Survey (WMS) is an international research initiative to explore differences in management practices across organizations and countries. Based at the Centre for Economic Performance at the London School of Economics (LSE) in the UK, the project is a joint initiative from researchers based at the LSE, Stanford University, the Harvard Business School, Cornell University and the World Bank. Our initiative is endorsed by several national Central Banks, major international organizations like the Inter-American Bank of Development as well as Finance Ministries and Employers Federations around the world. This wave has been run through the new Programme On Innovation and Diffusion supported by the Economic and Social Research Council. Since 2004 we have collected in-depth interviews with over 30,000 managers in over 40 countries across four sectors (manufacturing, retail, healthcare and education).

You can rest assure that all collected information is completely confidential. No names of companies or managers are ever mentioned or published, only aggregate results. Your responses are guarded by strict research confidentiality rules from the Research Ethics Boards of the major universities cited above. Furthermore, no company financial figures are discussed in our interviews, only management practices and organizational structures.

We very much welcome feedback about the research and look forward to hearing back from you and keeping in touch. Please send your comments and suggestions to admin@managementproject.org.

We hope you will enjoy reading this report and thank you again for your time and valuable contribution to this project.

Best regards,

Research Team

London School of Economics

INTRODUCTION TO THE PROJECT

The World Management Survey is a joint research project by academics at the London School of Economics (LSE), Stanford University, the Harvard Business School, Cornell University and the World Bank which looks at management practices within firms and how these affect productivity. There are large differences in organizational performance within and across sectors and regions, which research has thus far been unable to explain taking into account only the usual labour, capital and material inputs.

Traditionally, a portion of this unexplained differential has been ascribed to different levels of the quality of management across firms. However, there was no dataset of systematic and comparable quantitative data on firm-level management practices ¬- until now. The raison d'être of the World Management Survey is to fill this gap. Since 2004 we have conducted over 30,000 interviews in over 40 countries in North and South America, Oceania, Europe, Asia and Africa, in what is the first large-scale international management dataset to explore whether management can, in fact, help explain this productivity gap.

We find that that management practices vary greatly across both firms and countries, and that these practices are strongly linked to firm and national performance. Key factors associated with good management are competitive markets, multinational status, employee skills, as well as firm ownership and governance. We outline these in more detail below.

The data we have collected so far is not only helpful to company managers and business owners, it has also been used in several academic papers, as well as in numerous policy reports aimed at informing public policy, helping stakeholders understand how the adoption and implementation of modern management practices drives productivity and innovation.

Economies around the world are currently experiencing the aftermath of the Covid-19 pandemic, the repercussions of the Ukraine conflict and efforts to decarbonize. In this context, research enabled by the World Management Survey is key to the future development of policies for the manufacturing sector and has wide implications across the world, and has been strongly endorsed by several Central Banks as well as universities and manufacturing associations. Your input and continued help in this project is crucial for its successful continuation and also for the development of relevant policies.

Again, we deeply thank you for your contribution.

WHY SHOULD WE CARE?

The main premise of the project at its inception was that management practices are likely to have a strong relationship with performance and productivity.

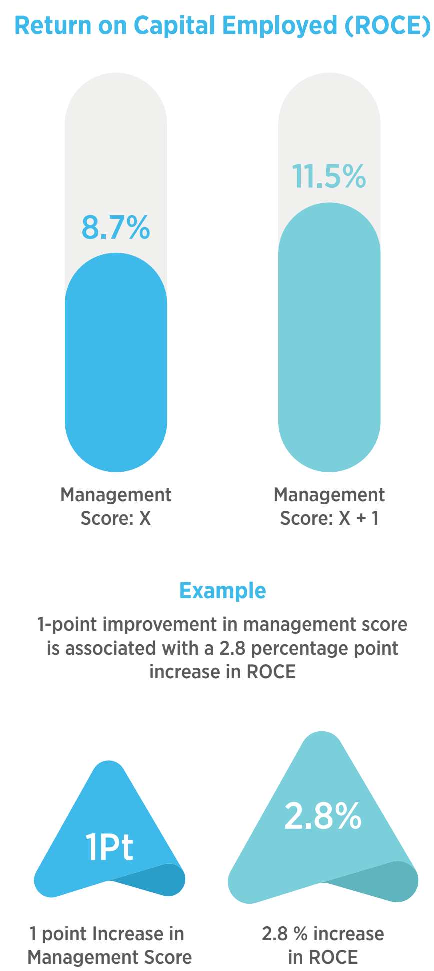
To explore this hypothesis our international team of industry and academic experts developed an interview tool in collaboration with leading businesses and consulting firms to capture management practices across firms and industries.

Using this interview tool, we have documented, assessed and analyzed a wide range of responses on managerial practices. Great efforts have been made to organize and codify these responses, in order to understand the variation in managerial practices.

Our earlier studies with manufacturing companies showed a strong relationship between management practices and company performance, such as productivity, return on capital employed, sales growth, market share growth and market capitalization. We have found that an improvement in management score is associated with an improvement in several performance measures, as shown in the diagrams below.

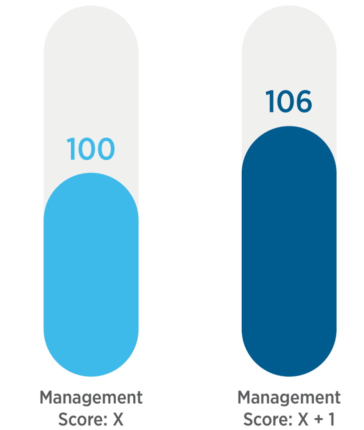
Understanding how management practices contribute to such improvements is key to determining what drives productivity. Our past research shows that improving management practices is a highly leveraged means of getting more output from firms' existing labour and capital. Increasing the quality of management, as we measure it, by one point is the equivalent of a 65% increase in capital, or a 25% increase in labour, and is true for all companies independent of sector, profitability, past productivity growth and size.

This is important because, although a one-point increase in management cannot be achieved overnight, it is potentially significantly less costly than the equivalent increases in labour and capital.

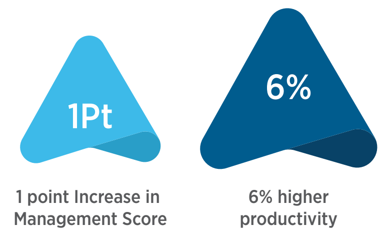


BETTER MANAGEMENT PRACTICES ARE ASSOCIATED WITH BETTER COMPANY OUTCOMES

Productivity[1] (indexed)

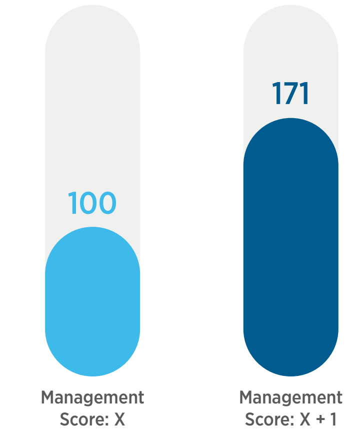


1-point improvement in management score is associated with 6% higher productivity

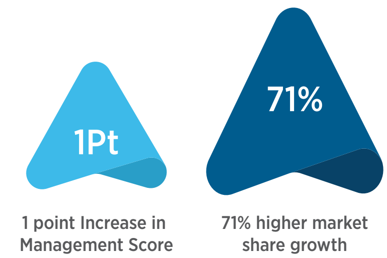


[1] Sales per employee

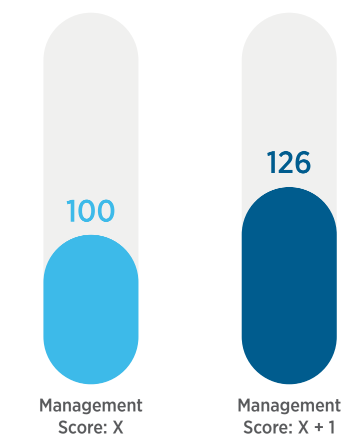
Market Share Growth (Indexed)



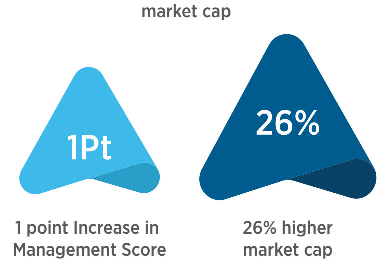
1-point improvement in management score is associated with 71% higher market share growth



Market Capitalization[2] (Indexed)

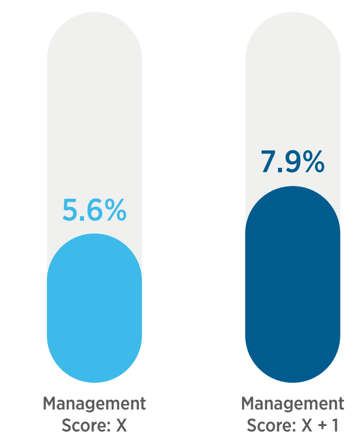


1-point improvement in management score is associated with 26% higher market cap

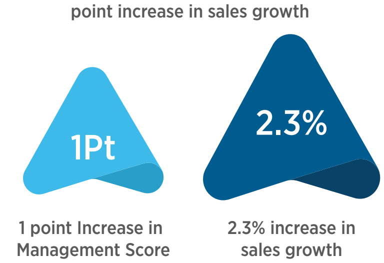


[2] Tobin's Q assuming constant book value

Sales Growth



1-point improvement in management score is associated with 2.3 percentage point increase in sales growth



[2] Tobin's Q assuming constant book value

THE PROJECT: METHODOLOGY

To examine management practices, we conduct 45-60 minute interviews with managers in charge of production in manufacturing plants. We look at three main areas of management:

1

LEAN OPERATIONS

Processes and behaviours that:
- Optimize production lines
- Create maximal value from physical assets

2

PERFORMANCE AND TARGET MANAGEMENT

Processes and behaviours that:
- Mesh physical and human aspects of business
- Align efforts of the whole organisation

3

TALENT MANAGEMENT

Processes and behaviours that:
- Optimise quality of workforce
- Maximise human capital

These three areas are broken down into 18 management topics, which cover each area in more depth. This allows us to examine the management of more specific parts of the plant.

LEAN OPERATIONS

The first section of the interview covers the operations of the plant, and more specifically what modern processes and behaviours have been introduced to optimize production. The three principal topics addressed in this section are:

- How lean or modern processes have been introduced.
- Why these processes have been introduced.

What the attitudes towards continuous improvement are.

PERFORMANCE AND TARGET MANAGEMENT

This section is divided into 2 subsections, the first covers performance management in the plant, and more specifically how performance is measured, tracked, and reviewed.

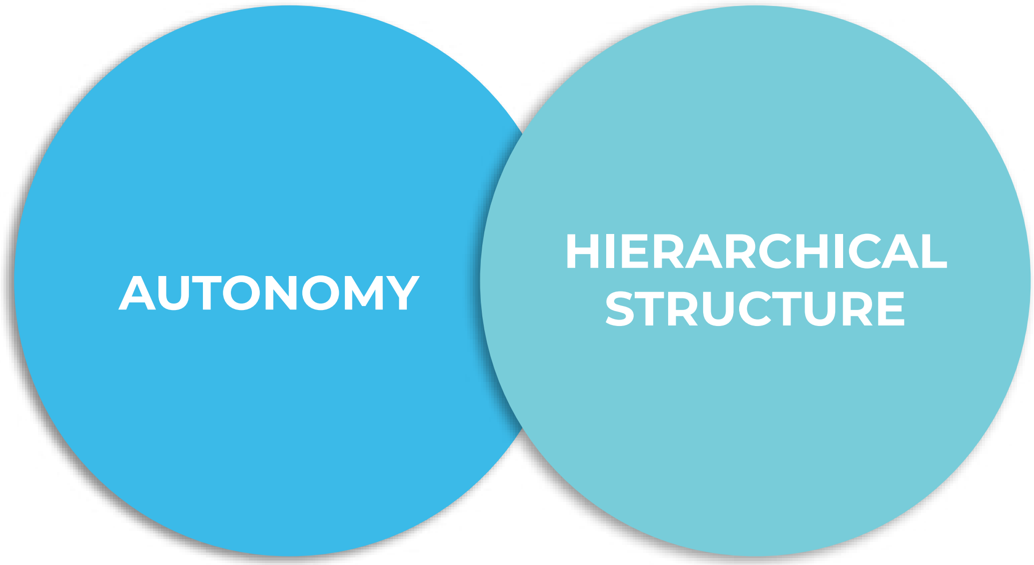
The principal topics addressed in this section are:

- How performance is tracked.
- How performance is reviewed.
- How differing levels of performance are managed.

The second subsection deals with the targets and objectives of the company:

- Types of targets and objectives.
- How the targets are broken down and communicated to the workers.
- Timescale of the targets.
- Motivation behind the targets.
- Talent management
- The third section of the management questions looks at talent management within the company. The main issues covered in this section are:
- How talent is attracted and developed.
- How good performance is identified, developed, and rewarded.
- What is done to manage underperformance.

ORGANIZATION STRUCTURE



We also examine a firm's organization structure, considering several aspects of manager and worker autonomy, as well as the hierarchical structure of the company.

For the Managers we want to understand:

- Their autonomy relating to hiring and firing workers.
- Their role in the introduction of new products.
- The maximum capital expenditures they can make without signoff from corporate HQ.
- Their sales and marketing autonomy.
- All this is examined by considering:
- The number of levels below and above the plant manager.
- Changes in the levels of hierarchy in the previous 3 years.
- Span of control (how many direct reports the Manager has).

THE PROJECT: EXAMPLES

LEAN OPERATIONS

Best practice example: Lean processes are fully implemented across all areas of the firm and have been in place for several years. Lean is part of the culture of the company and was introduced as a means of achieving the business objectives of the company and thus be the best in the industry. The employees of the firm constantly analyze the production process as part of their normal duties. Critical areas of production are thoroughly analyzed in regular meetings aimed at the continued improvement of processes in the firm. Every problem is registered in a special database that monitors critical processes and each issue must be reviewed and signed off by a manager.

Intermediate example: The firm has introduced some lean processes, but these are limited to a certain area in the firm or are in start-phase. The implementation of such processes is geared towards reducing costs, and thus increasing the efficiency of the production process. Employees identify problems in the production process, and possible solutions are discussed in regular meetings involving employees and a manager.

Weak example: The firm has not introduced any lean or modern processes, retaining a traditional form of management. The firm has no formal or informal mechanism in place for either process documentation or improvement. The manager mentioned that production takes place in an environment where nothing has been done to encourage or support process innovation.

PERFORMANCE MANAGEMENT

Best practice example: The firm tracks performance using a good range of indicators, which are measured formally and as often as is possible and reasonable. Records are updated automatically in computer systems which all staff can access. Various visual systems around the plant allow staff to check their performance against the indicators. Performance is reviewed is regular meetings involving the senior management, resulting in action plans for each issue raised in the meetings. The results of all meetings and the details of actions plans are communicated to all staff. Action plans are monitored continuously to ensure adequate progress.

Intermediate example: The firm has a range of performance indicators that are tracked daily and measured in regular meetings involving the senior management. Staff has access to performance data, which is published on the company server. This is updated monthly. The manager responsible regularly checks up action plans resulting from these meetings, with action taken to rectify potential problems.

Weak example: The firm tracks its performance using only volume as an indicator. Senior management sees this data, but it is not communicated to the rest of the staff. Performance is reviewed informally, with meetings being called to deal with specific problems in production. Little or no action is taken to rectify problems or delays in a plan.

TARGET MANAGEMENT

Best practice example: The firm has a good balance of financial and non-financial targets which are considered key to the long-term success of the firm, and which are regularly revised to reflect economic changes and ensure achievability. These goals are cascaded through the firm down to the individual worker. The goals and targets are clearly communicated to encourage individual workers to compare their performance against their targets and to encourage competition.

Medium example: The firm has some concrete non-financial goals that form part of the managers' appraisal, but these are not a priority. Performance measures and targets are clear and are broken down to department level. Targets are set taking into account a variety of factors that will affect their achievability, such as availability of raw materials and machine capability. Team or department performance is made public and is accessible to all staff.

Weak example: The firm's goals are exclusively financial and operational and are largely of a short- term nature. The firm has general goals that are not cascaded down through the firm, staff being mostly unaware of their targets. Targets are generally surpassed and are set based on the management's experience.

TALENT MANAGEMENT

Best practice example: Attracting and developing talent at all levels of the firm is formalized through targets and rewards. Both manag-

ers and non-managers are paid on a performance basis and are given both financial and non-financial rewards for achieving their targets. Regular reviews are in place to assess each individual employee's performance and identify the best and worst performers. Underperformers are put on performance improvement plans immediately. The best performers are given personalized career plans to develop the skills necessary for growth within the firm. The firm has a policy of offering the best opportunities for top performers within the firm, as well as for top prospective employees.

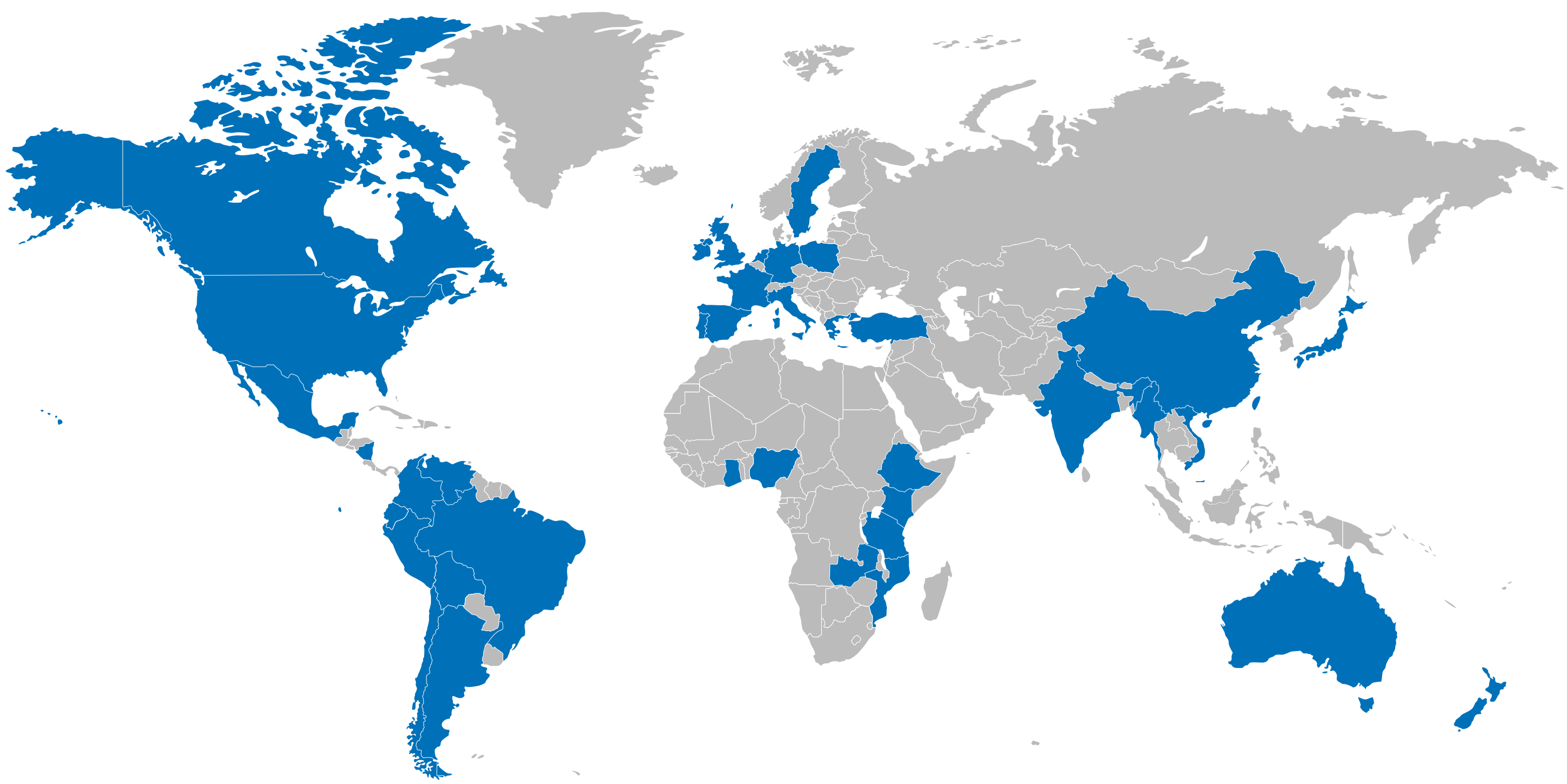
Medium example: Senior management in the firm believes that attracting and developing talent is important, but managers are not held accountable for it. All staff are regularly evaluated and are paid based on their individual performance. Underperformers are identified through these reviews and are removed or moved to less critical positions in the firm. The best performers are identified and are identified as potential candidates for promotion.

Weak example: The firm has no system to attract or develop talent. Both managers and workers are paid equally regardless of their performance and there are no consequences for poor performance beyond some disciplinary measures (workers are never fired). The firm has not got a promotion system in place as there is very little room for growth and no one has been promoted in years.

THE PROJECT: COVERAGE

The project began surveying the UK, Germany, France, and the US, and has gradually been extended to include over 40 countries across nearly all continents in the world. To ensure our results are representative, we take a comprehensive list of firms from each country and industry, and randomly select managers to participate in our study. For manufacturing, our sample focuses on firms with between 50 to 5,000 employees. Since participation in the study is completely voluntary, we also record response rates and ensure no biased results.

FIGURE 1: GEOGRAPHIC SCOPE OF THE PROJECT



SUMMARY RESULTS
MANUFACTURING

SUMMARY RESULTS: MANUFACTURING

There is a disparity of productivity and riches around the world, and manufacturing makes up an important part of a country's GDP. What are some of the things that affect GDP? It's reasonable that management is one of them. Indeed, we see that countries with higher GDP per capita also have better management. It is important to note that, when we say "better management", we mean this in the sense of the earlier evidence on how the level of the structured management a firm has and productivity: management practices that are relatively more structured and formal have a direct link with higher productivity.

Results vary greatly within and across industries, countries and regions. Earlier industrialized economies like the United States and Japan typically have the best management, while emerging economies like China and India fare less well. African and Latin American countries appear to be less well managed, on average, but improving.

This observation shows management is an area of current comparative advantage for European and North American firms, though we have seen this shift over time. Our data suggests that firms have an incredible learning capacity and when we interview the same firm across time there is generally an improvement in the level of structured management practices. That is, it is possible that significant improvements in developing countries within the next couple of decades could erase a lot of the Global North's current productivity advantage.

We hope that you will take some of the information in this report and think through it in a critical way. Do contact us for questions and comments, as we are always keen to hear feedback. It is managers like you, who participate in projects that like this, who will drive the continuous improvement and drive to increased productivity over the next years.

FIGURE 2: AVERAGE MANAGEMENT SCORES AND GDP PER CAPITA

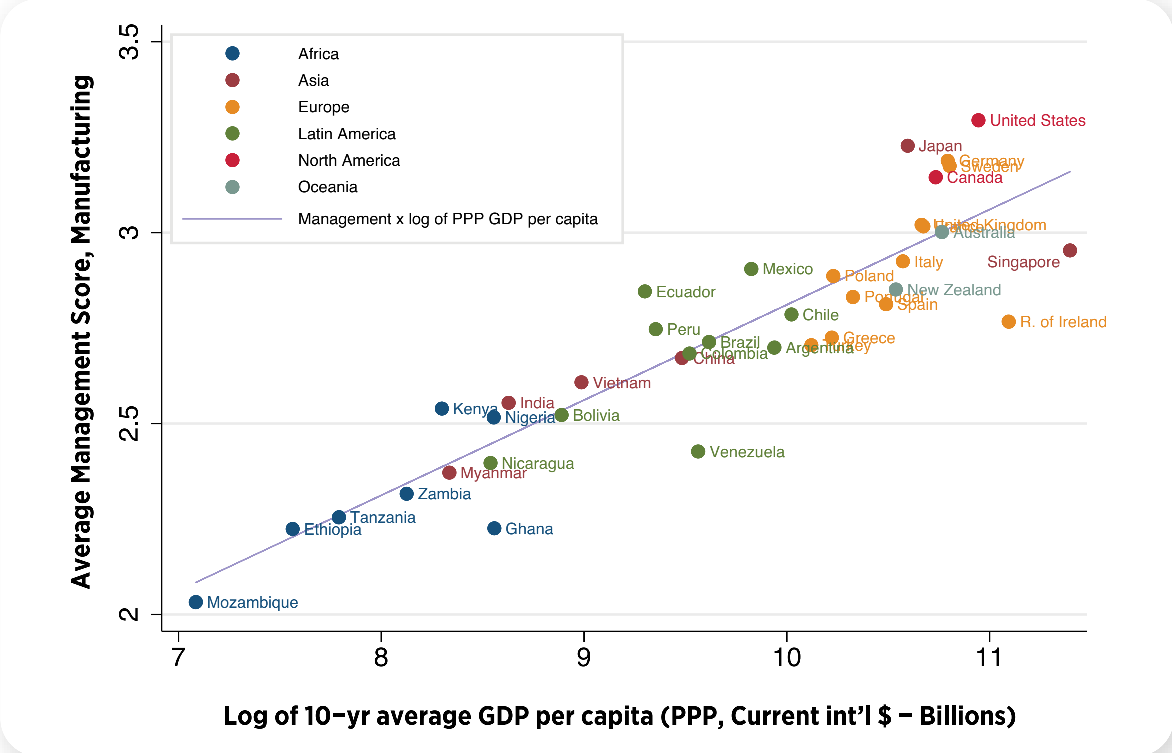
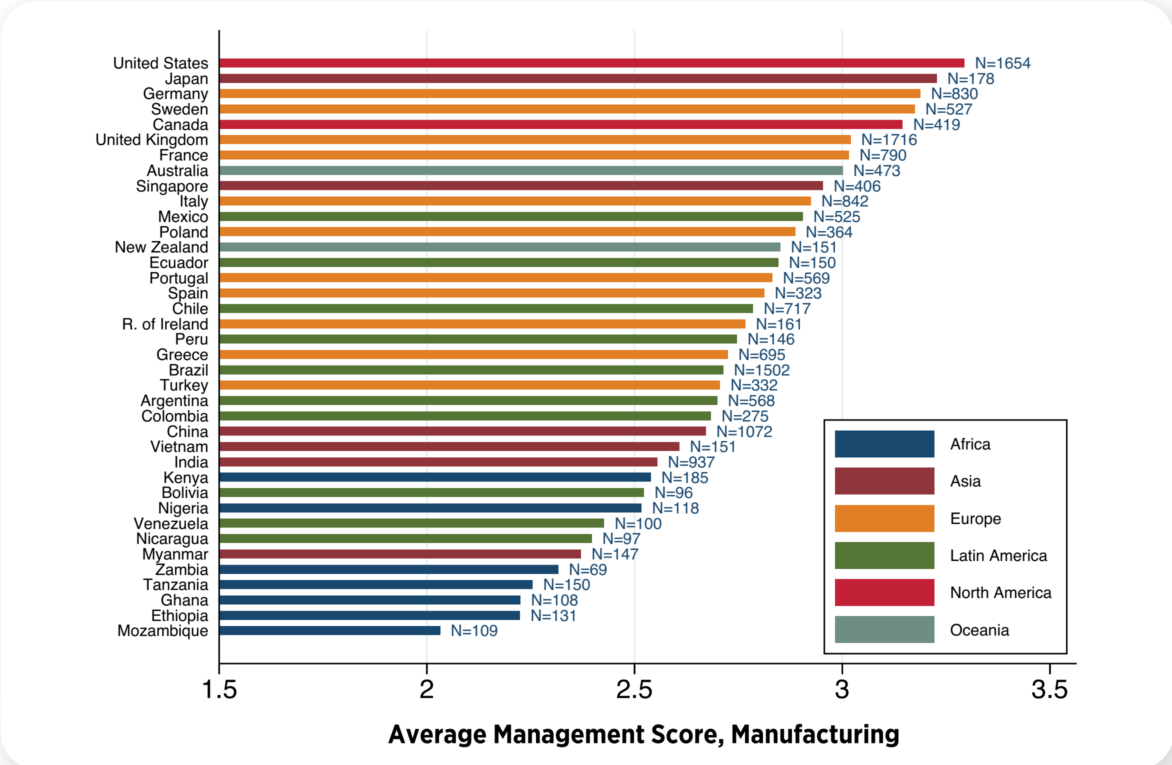


FIGURE 3: AVERAGE MANAGEMENT SCORE AND NUMBER OF FIRMS, BY COUNTRY



WHAT FACTORS MIGHT EXPLAIN THIS SPREAD?

We have explored several reasons that may explain the large variability we see in management practices: ownership, competition, globalization, skills and regulation.

OWNERSHIP

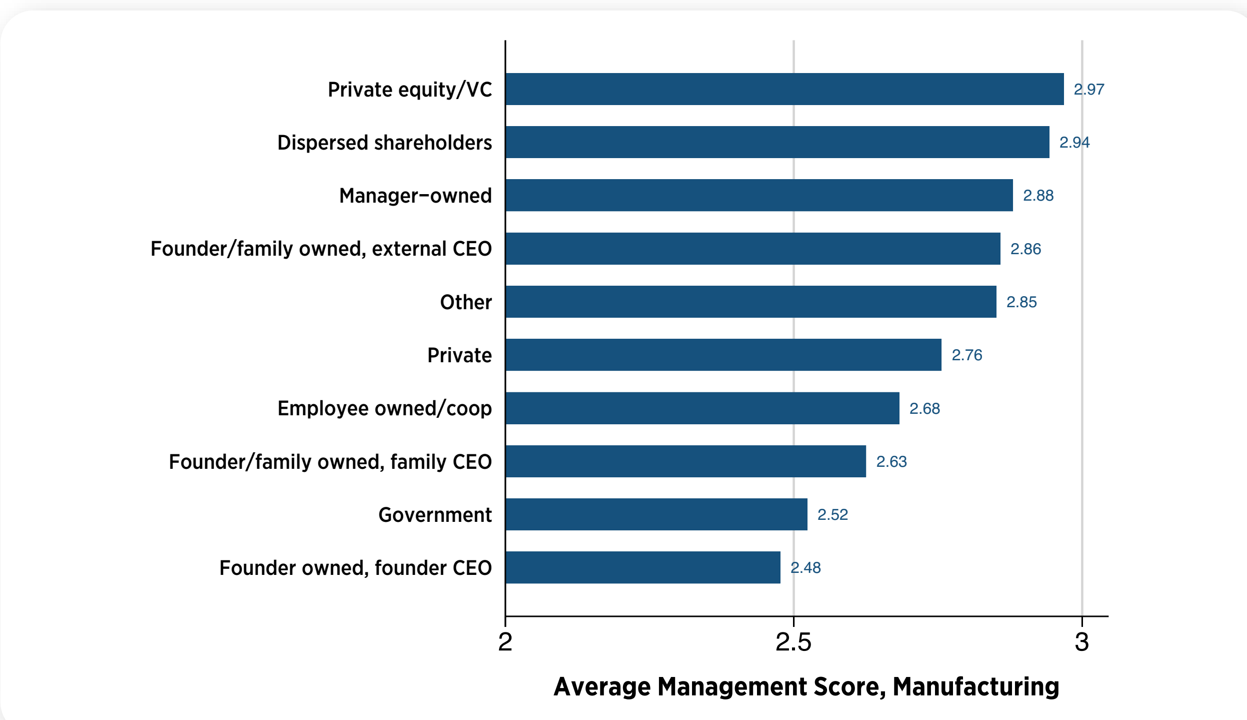
Management practices also vary significantly across ownership structures. The graph below includes companies from all countries surveyed, divided across ownership status.

We find that firms owned by private equity or venture capital investors or with dispersed shareholders (no one entity owns more than 25% of the company) tend to have higher management scores. Family-owned and controlled firms tend to have the lowest average management scores, but interestingly when the control is passed on to an external CEO these firms are, on average, nearly as well managed as dispersed shareholder firms. Ongoing research is investigating why this could be the case, but a plausible explanation is that it is due to with implicit informality that arises from working in a familial environment.

We find, relative to other firms, those that are founder/family owned and managed firms tend to adopt fewer of these structured management practices that are positively linked with productivity. The key point being that founder/family ownership is not the main driver, but rather control (i.e. family/non-family CEO). Founder/family firms that have a founder/family member as CEO are at the bottom of the ranking of structured management practices implemented, but founder/family firms with an external (non-family) CEO are at a similar rank.

Considering that family firms are such an important feature of many countries' economies, this is a key finding in our research. This means there is an incredible productivity boost waiting to be unleashed in founder/family-owned and controlled firms. We believe this is a key area for potential improvement because we strongly believe that all managers are able to implement best practices, and the next step in this research agenda is to find out why these are not being implemented.

FIGURE 4: AVERAGE MANAGEMENT SCORE OF FIRMS, BY OWNERSHIP STRUCTURE



COMPETITION

One of the reasons that the United States has very few firms that fail to adopt at least some structured practices (when compared to Latin American and African countries) is that the level of competition in the US is substantially higher than elsewhere. Competition has long been regarded an effective driver of productivity because it forces firms with lower levels of structured management to improve or exit the market. Competition also provides firms with lots of rivals to copy and learn from. It is therefore unsurprising that competition is strongly linked with more structured management practices in every country and industry we have studied. Hence, a clear policy tool to increase management practices is increased product market competition – enabling firms to enter, removing any regulatory barriers on trade, FDI or market entry and vigorously policing anti-trust. In short, policy aimed at fostering competition should thus be given more attention.

At the beginning of the interview, we ask managers how many major competitors they believe they have. We see that there is a clear positive correlation between the number of reported competitors and the quality of management practices within firms.

FIGURE 5: AVERAGE MANAGEMENT SCORE, BY NUMBER OF COMPETITORS

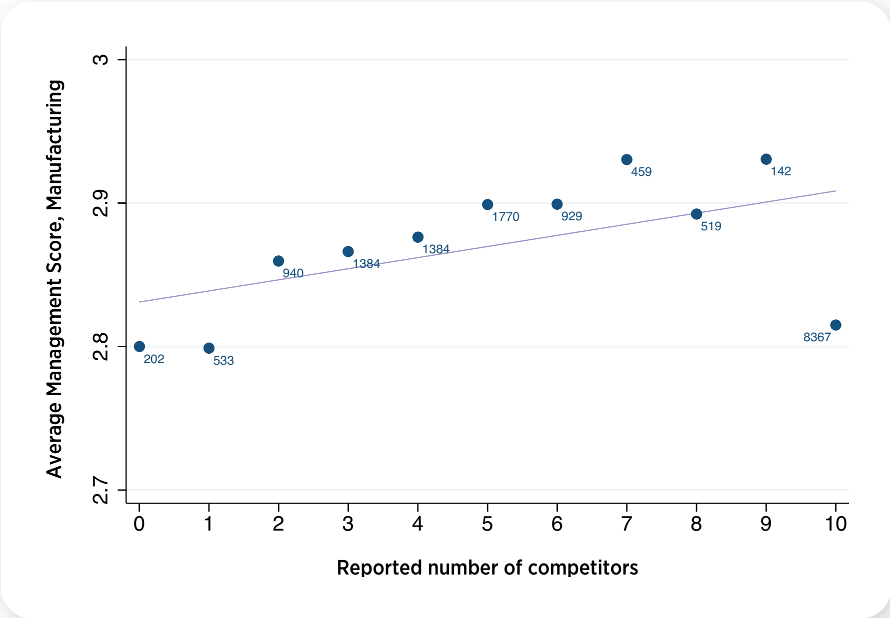
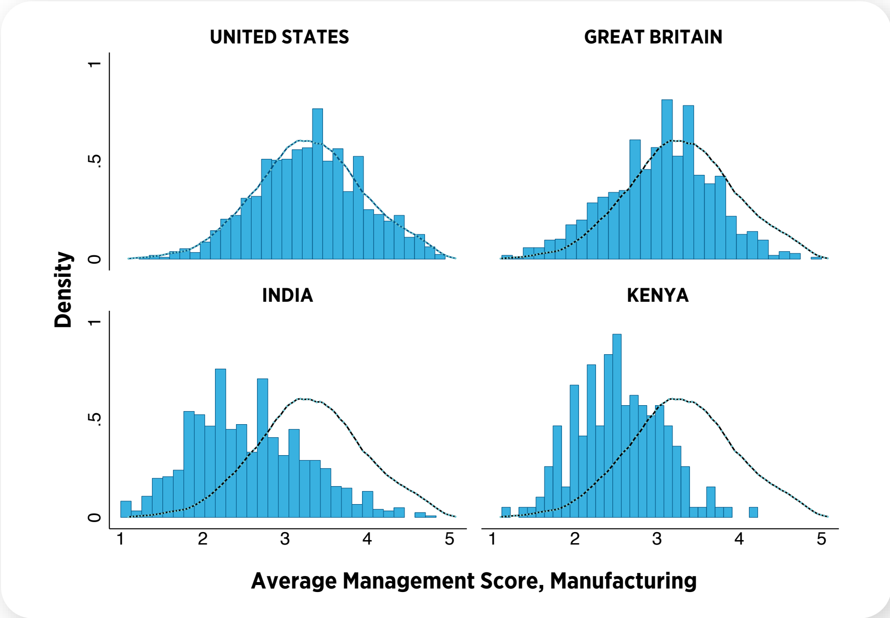


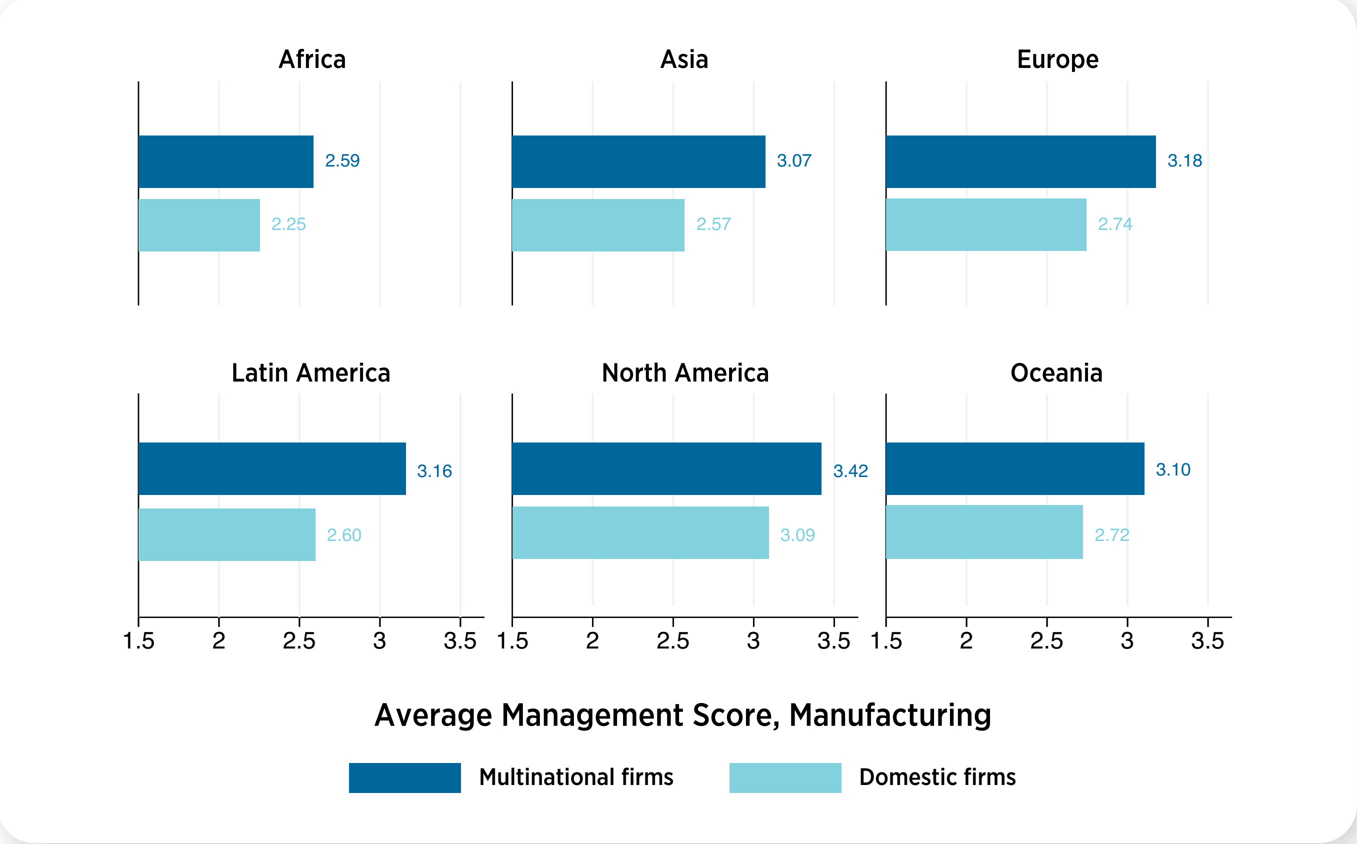
FIGURE 6: DISTRIBUTION OF MANAGEMENT SCORES ACROSS SELECTED COUNTRIES



GLOBALIZATION

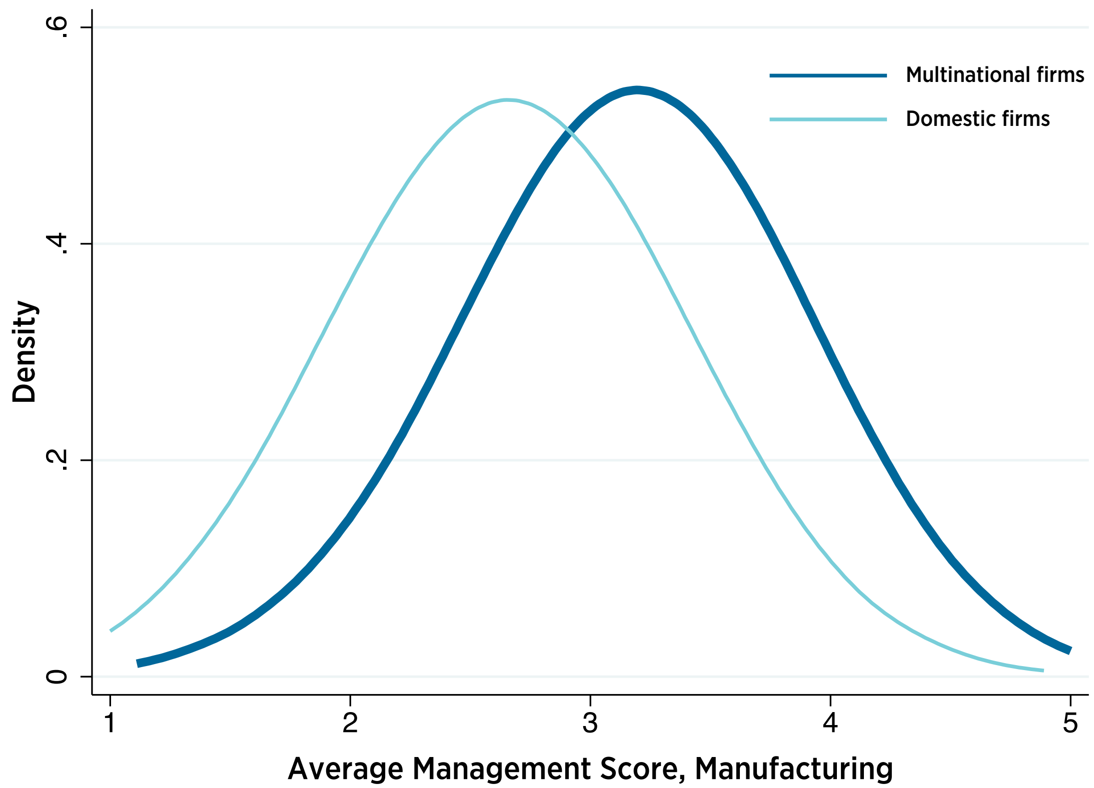
Multinational firms usually outperform domestic-focused firms on several dimensions, such as productivity, worker wages and research & development expenditures. Much of this push for innovation and competitiveness is a result of stiff competition in the global market. As we show above, there is evidence that competition is linked with better management practices.

FIGURE 7: AVERAGE MANAGEMENT SCORES OF MULTINATIONAL AND DOMESTIC-ONLY FIRMS, BY CONTINENT



The higher levels of structured management on average of multinational firms can be tied to their substantially smaller share of firms with low levels of structured management – a scarce "lower tail" of the distribution, highlighted in the graphs below.

FIGURE 8: DISTRIBUTION OF MANAGEMENT SCORES OF MULTINATIONAL AND DOMESTIC-ONLY FIRMS



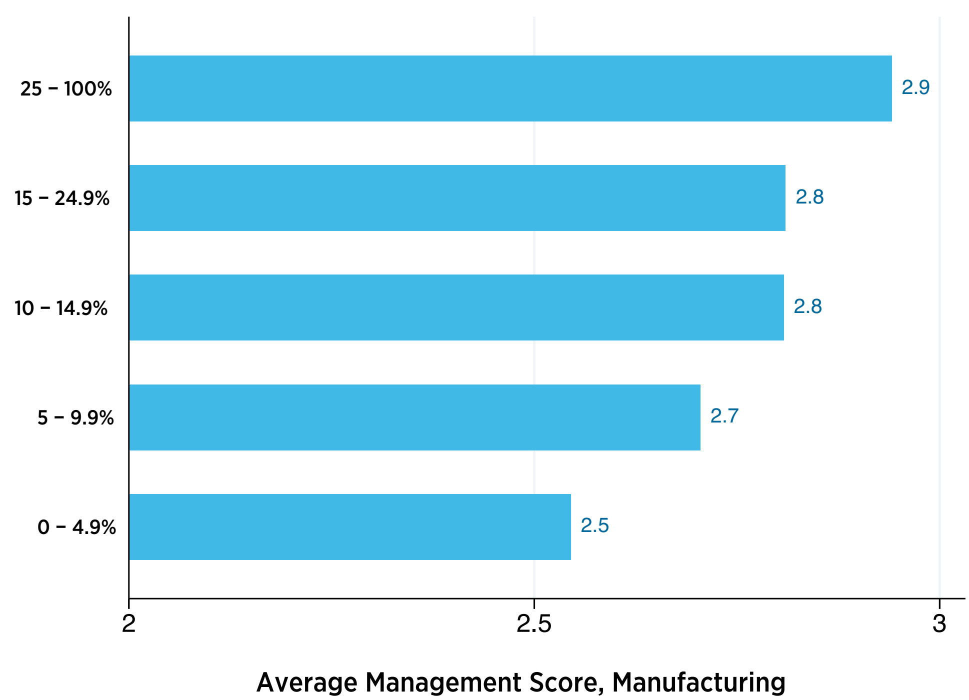
EDUCATION AND SKILLS

Workers' education and skills are seen as being key drivers of productivity across countries. This is supported by new evidence from our work, which shows that better managed firms have a higher share of employees holding a degree. It is perhaps unsurprising that having more educated managers helps, but we also found an equally strong correlation between the education of the non-managers and our management scores.

We find a strong relationship between the share of managers and workers with college degrees and level of management structures. This makes sense when considering the importance of not just knowledge of best practices, but also of implementation of these best practices. Cultural changes within companies are only successful when there is understanding of these changes among employees, which is often easier to achieve when workers have higher education levels and can be included in discussions about these changes. If an employee understands how what they do on a day- to-day basis affects the company and how it affects them, they are also more likely to work harder.

Building a skilled workforce in areas where the average level of schooling is generally low can be challenging. However based on our findings, it is clear that there is an added incentive for continuing education of managers as well as employees aimed at improving workforce skills. This does not necessarily mean enrolling employees in university degrees; it can mean investing in training by identifying the skills most needed and offering training and workshops to address those areas. These can be as simple as classes on how to understand numbers or classes on what the company is striving to achieve, and how the employee fits into that. For example, if the manager says "we want to increase profit margins by 10%", but the employees have no concept of what that means, it is less helpful. However, if the employee understands that, say, missing their individual production target by 2 sacks of rice in a day will reduce this profit margin by 0.5% which in turn reduces the likelihood of a wage rise, the employee would have both a better understanding of their responsibility and more motivation to reach those targets.

FIGURE 9: AVERAGE MANAGEMENT SCORE, BY % OF EMPLOYEES HOLDING A UNIVERSITY DEGREE



LABOUR MARKET REGULATIONS

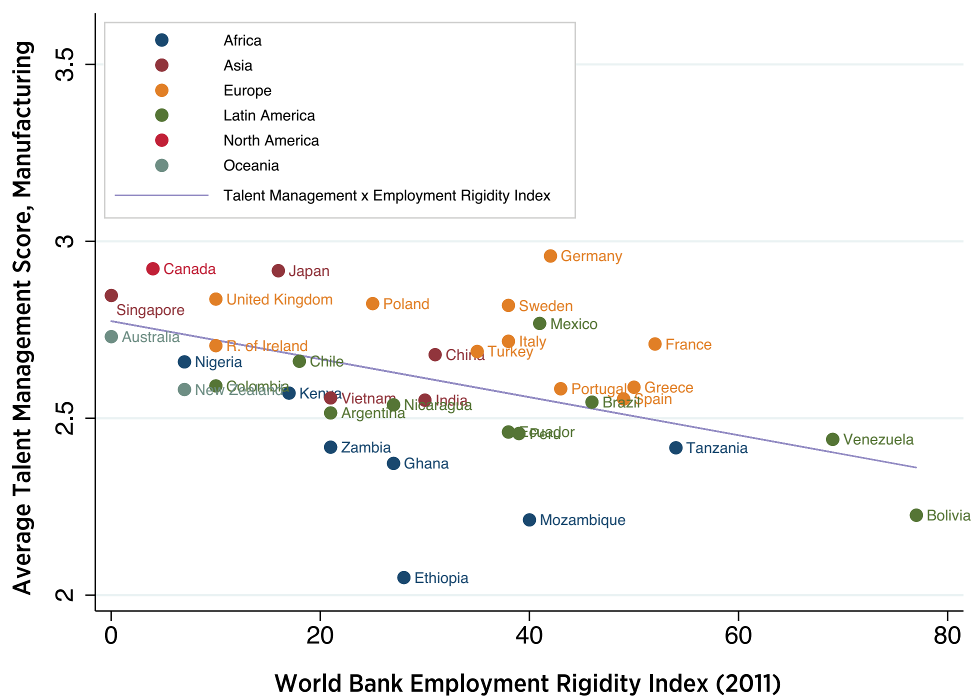
Labour regulations can often be important safeguards for workers against unfair employers. However, they can also create a very rigid labor market and reduce firms' incentives to monitor and manage employees' performance.

The World Bank's Doing Business Project provides measures of business regulations across the world. From 2009 to 2021 the World Bank ranked countries on the ease of doing business. In the initial years of this project, an important component of the overall 'ease of doing business' index was the Rigidity of Employment Index (REI), which quantifies the difficulty of hiring and firing employees, scheduling non-standard work hours, and scheduling annual paid leave.

We found a correlation between a higher REI and a lower talent management score. The United States is one of the countries with the lowest REI, and also the country with the highest talent management score.

Although we understand these are, of course, out of the hands of individual managers and firms, we still believe there is a benefit to introducing at least some structure to talent management. For example, even if the legal labour environment does not allow for firing of continuously poor performing employees, there should be a structure in place that a) identifies who these poor performers are; b) attempts to re-train and motivate them to do better; c) if (b) fails, then rather than firing them at the very least re- locate them to a position that will not be detrimental to productivity within the firm.

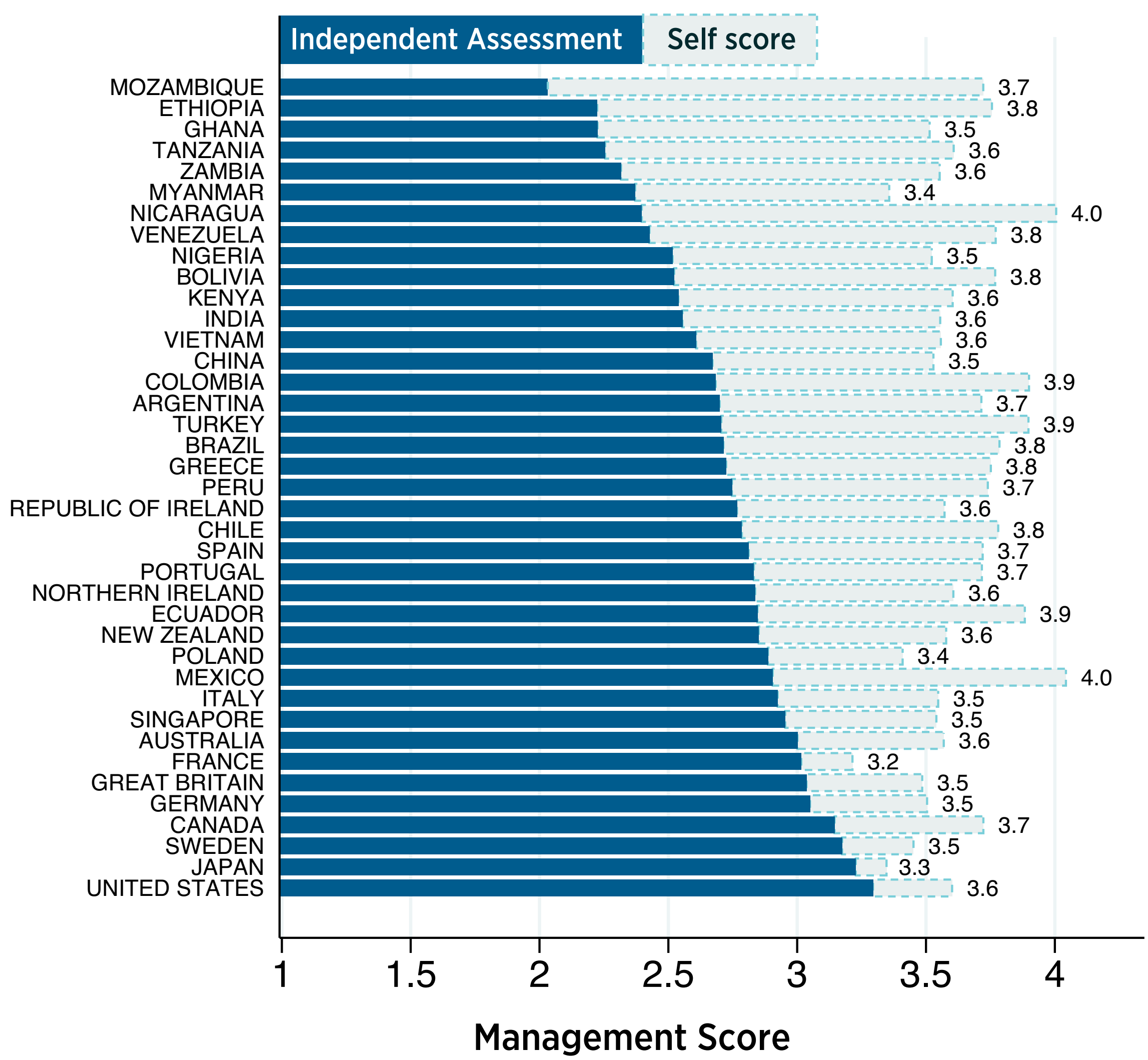
FIGURE 10: AVERAGE TALENT MANAGEMENT SCORES AND DEGREE OF LABOUR MARKET REGULATION



MANAGER PERCEPTIONS AND PERSPECTIVES

An important driver of levels of structured management stems from the manager's perception of the level of structured management of their establishment. The last question in our interview asks managers to score the level of the management practices as a whole *in their firm* (not themselves) on a scale of 1 to 10. We then divide this number by 2 and compare with the independent assessment (listed in Figure 2). Comparing these scores show a striking pattern: managers across the globe believe the management practices followed by their establishments are substantially more structured than our measures would indicate. The main issue this raises is that, if managers are not aware of the opportunities for improvement, they are not likely to pursue any initiatives to do so. The gap across countries is shown below.

FIGURE 11: INFORMATION GAP ACROSS COUNTRIES



CONCLUDING POINTS

If we accept the link between firm management and productivity, these findings suggest that poor management practices could be a factor behind the lower levels of productivity in many countries. This is also an opportunity for policy development: many improvements in management practices can be affected with relatively low capital investment, which is particularly important in low- and middle-income economies such as those in Africa.

Understanding the drivers of better management in establishments is a fruitful area for policy development. The main policy relevance of this academic work stems from the fact that many of the best practice management changes do not require a high level of physical capital investment, but rather an investment on the part of the owners/managers to drive a deep culture change within their firm to change processes of doing things.

We hope this report will serve as a first step towards critically assessing the management structures in place in your firm, and we greatly welcome any comments and views you would like to share. As mentioned in the opening letter of this report, please get in touch with us at admin@managementproject.org with your comments and questions.

THANK YOU TO OUR FUNDERS

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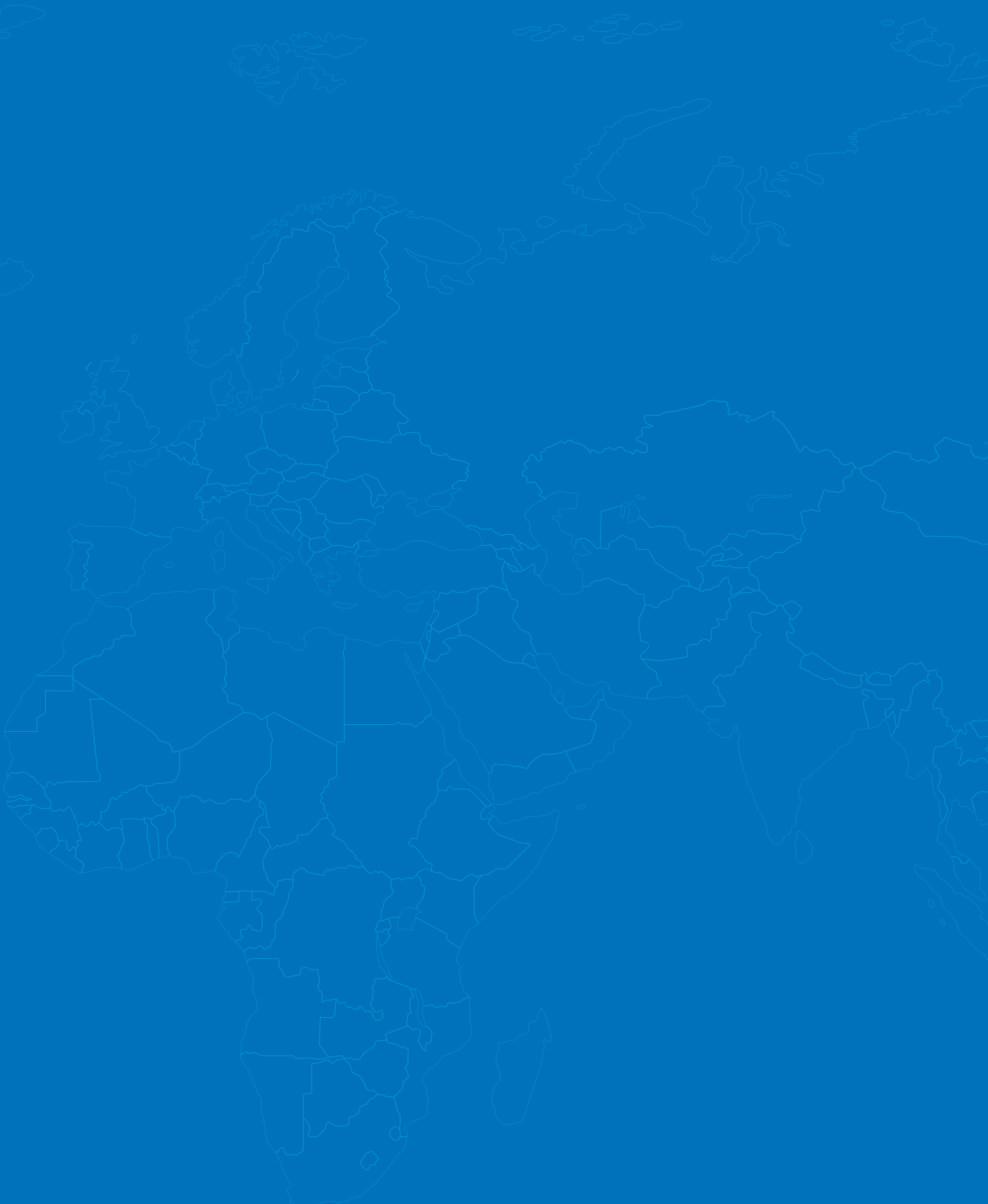

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