The International Empirics of Management*

Daniela Scur[1], Scott Ohlmacher[2], John Van Reenen[3], Morten Bennedsen[4], Nick Bloom[5], Ali Choudhary[6], Lucia Foster[7], Jesse Groenewegen[8], Arti Grover[9], Sjoerd Hardeman[10], Leonardo Iacovone[11], Ryo Kambayashi[12], Marie-Christine Laible[13], Renata Lemos[14], Hongbin Li[15], Andrea Linarello[16], Mika Maliranta[17], Denis Medvedev[18], Charlotte Meng[19], John Miles Touya[20], Natalia Mandirola[21], Roope Ohlsbom[22], Atsushi Ohyama[23], Megha Patnaik[24], Mariana Pereira-López[25], Raffaella Sadun[26], Tatsuro Senga[27], Franklin Qian[28], Florian Zimmermann[29†]

Abstract

A country's national income broadly depends on the quantity and quality of workers and capital. But how well these factors are managed within and between firms may be a key determinant of a country's productivity and its GDP. Although social scientists have long studied the role of management practices in shaping business performance, their primary tool has been individual case studies. While useful for theory-building, such qualitative work is hard to scale and quantify. We present a large, scalable dataset measuring structured management practices at the business level across multiple countries. We measure practices related to performance monitoring, target-setting, and human resources. We document a set of key stylized facts, which we label "the international empirics of management". In all countries, firms with more structured practices tend to also have superior economic performance: they are larger in scale, are more profitable, have higher labor productivity and are more likely to export. This consistency was not obvious ex-ante, and being able to quantify these relationships is valuable. We also document significant variation in practices across and within countries, which is important in explaining differences in the wealth of nations. The positive relationship between firm size and structured management practices is stronger in countries with more open and free markets, suggesting that stronger competition may allow firms with more structured management practices to grow larger, thereby potentially raising aggregate national income.

*All authors listed contributed to the methodology adaptation and data collection efforts in their respective countries. Coordination of datasets, analysis and writing were led by Daniela Scur, Scott Ohlmacher and John Van Reenen. Any opinions and conclusions expressed herein are those of the authors and do not represent the views of the U.S. Census Bureau, the Board of Governors of the Federal Reserve System or its staff, or the Bank of Italy. The Census Bureau has ensured appropriate access and use of confidential information and has reviewed these results for disclosure avoidance protection (Project 7512395: CBDRB-FY22-CES008-004, CBDRB-FY23-0519). This work was produced using statistical data from the UK Office of National Statistics (ONS). The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates. Kambayashi and Ohyama received a research grant from JSPS KAKENHI Grant #18H03633. We thank participants at the 2022 Empirical Management Conference, the 2023 Federal Statistical Research Data Centers Annual Conference, and the 2024 ASSA Annual Meeting for helpful comments.

†[1]Cornell University, [2]Federal Reserve Board of Governors, [3]London School of Economics and Political Science, [4]Department of Economics, [5]Stanford University, [6]Loughborough University, [7]US Census Bureau, [8]Utrecht University, [9]International Finance Corporation, [10]Utrecht University, [11]World Bank, [12]Musashi University, [13]Federal Office for Migration and Refugees, [14]World Bank, [15]Stanford University, [16]Bank of Italy, [17]LABORE, [18]International Finance Corporation, [19]Queen Mary University of London, [20]Universidad CLAEH, [21]Universitat de Barcelona, [22]Yrittäjät, [23]Hitotsubashi University, [24]LUISS Guido Carli, [25]International Finance Corporation, [26]Harvard University, [27]Queen Mary University of London, [28]University of North Carolina at Chapel Hill, [29]Institute for Employment Research.

Given similar inputs of machines and workers, why are some firms more productive than others? Understanding the wide distribution of productivity has long been the subject of economic inquiry, and one factor in particular — managerial practices — has been understood as crucial for centuries (e.g. Smith; 1776; Syverson; 2011; Walker; 1887). However, this understanding needs to be rigorously quantified to indicate *how much* management matters for firm and, in turn, national productivity. A key bottleneck had been how to measure the quality of management in organizations. This paper compiles results of a multi-decade, international effort to consistently measure the adoption of structured management practices across the world, at scale. Using a shared yet flexible survey methodology, an international consortium of research teams have partnered with national statistical agencies, central banks, non-governmental organizations, and academic institutions to collect data on firms' use of a set of management practices related to performance monitoring, targeting, and incentives: the "Management and Organizational Practices Survey" (MOPS).

We present the first results of this collaboration, a remarkably consistent set of stylized facts that we label "the international empirics of management." This consistency is striking given the presence of vastly different business environments in which the surveys were conducted. In all countries, firms that have adopted structured management practices (measured in our data as a "higher" management score) are on average more economically successful, whether this is measured by productivity, profitability or the propensity to export. Our management score is also positively associated with the size of the business (scale), whether measured by inputs (like employment) or outputs (like revenue). One interpretation of this size-management correlation is that structured management reflects higher managerial quality and stronger competition may allow such firms to garner larger market shares (e.g. Foster et al.; 2008; Lucas; 1978). We note that the strength of this "reallocation" of workers from weaker firms to stronger firms varies systematically by country, being stronger in nations such as Denmark and the US and weaker in countries like Pakistan and Russia. This finding suggests that when competition is potentially inhibited by market "frictions" (such as more protected product markets, more red tape, greater corruption, etc.), there is a greater misallocation of resources to weaker and less productive businesses. This matters as it will depress aggregate national productivity.

We also document substantial variation in the adoption of structured management practices across businesses, within countries and industries. This is true even in high competition environments such as the United States, highlighting the existence of important organizational frictions in the diffusion of management practices Gibbons and Henderson (2012). This suggests there is much room for improvement, presenting an opportunity for leaders to po-

tentially increase national income by considering how certain types of management practices may help improve firm performance Giorcelli (2019).

The structure of the paper is as follows. Section 1 gives the results, section 2 provides a discussion of the results and Section 3 describes our methodology. To facilitate further investigation, we are making the main summary statistics — means, medians and standard deviations — of all the individual countries publicly available for researchers and policy makers, and give details of how to access the underlying micro-data in the Supplementary Information files.

1 Results

The methodology, detailed below in Section 3, generates a management score for each firm that measures the extent to which practices in their manufacturing process are considered "structured". Structured practices broadly mean that firms have a set of formalized practices in place such that the tasks associated with a particular process would be carried out in a consistent manner as a matter of course. For example, if the process in question is *monitoring production*, a structured practice would mean the firm has a consistent set of performance indicators they identified as important for their production process, and these are regularly measured and made available as part of a routine, without the plant manager needing to personally do so in an ad-hoc manner.[1] The management score is an average of 16 basic management practices.[2] With this data, we document key stylized facts that we have found to be international empirical regularities: consistent positive relationships between more structured management practices and better economic outcomes.

In Figure 1 we show the average of four key firm performance variables relative to each country mean, across within-country deciles. Panel (a) shows the relationship between structured management practices and labor productivity (as measured by the log of the ratio of revenues to workers), which is a key measure of overall economic performance. There is a strong and positive association. Panel (b) shows the relationship of management with firm profitability, which is the focus for business owners, as it ultimately determines market

[1] A key trade-off in the scalability of the MOPS is that the self-respondent questions can capture the structures that the firm has in place, but it will miss details on the level of implementation that can be captured via a telephone interview as in the World Management Survey. For example, MOPS can ask the set of indicators a manager uses, but cannot cross-check how many are regularly used. There are additional modules that go beyond measuring adoption and measure usage and intensity, for example the "data driven decision-making" module in the US Census MOPS Brynjolfsson and McElheran (2016).

[2] The original US Census questionnaire had 16 practices; most countries have also collected data on all 16 but some have omitted some questions for various feasibility reasons. Details can be found in the Appendix.

success. Panel (c) shows the relationship of management with the share of businesses that are exporters – that is, firms successfully sell their products in overseas markets. Panel (d) shows the relationship with firm size as measured by (i) the number of employees and (ii) by sales revenues. The dark gray bars show the average log employment within each decile of management scores (relative to the country mean). The lighter gray bars do the same for log of revenue. Across all panels there is a clear upwards sloping pattern across all outcomes.

Figure 2 illustrates the relationship between structured management and labor productivity within each country in our sample. While this relationship is noisy for some of the countries (for example, China), it also appears that there is a consistently positive relationship for each nation.

Figure 3 shows the employment size-management relationship separately for each of our countries. Three broad country groups are visible. Russia has the lowest correlation between size and management, followed by Pakistan. This is unsurprising as the latter is the least developed country in our sample and Russia has known problems of corruption and impaired market forces. Croatia is next lowest, which is more surprising as it is a recent EU Member State.[3] Not all of the differences between countries are statistically distinguishable, but many are. For example, Denmark, a very wealthy country, has a very high employment-size coefficient that is significantly larger than some other countries such as China and Uruguay. Pakistan and Russia have significantly weaker scale-management associations than all countries except Croatia.

Because the methodology has a country-specific component, direct comparisons of cross-country means present challenges but we can compare the *shapes* of the distributions. Figure 4 shows the distribution of the MOPS scores normalized to the country-specific mean, displaying considerable variation in the fraction of structured management practices adopted in all 14 countries.

2 Discussion

The positive correlations in Figures 1 to 3 cannot, of course, be simply taken as causal. More successful firms may invest in increasing their management scores or there may be unmeasured factors driving both management and the performance outcomes we measure (c.f. a large literature on CEO style Bertrand and Schoar (2003)). Or, firms with more skilled workers

[3]We show in the Appendix that Croatia's correlation between size and management is stronger, and more typical of an OECD country, when we correct for the specific sample restrictions of the Croatian data (i.e. because firms above 250 employees are not sampled).

may be both larger and have more structured practices (c.f. Bender et al. (2018); Cornwell et al. (2021)). These caveats hold true across all the data patterns we examine. While we cannot infer causality from these results, there is a substantial body of work that shows that higher level of structured practices – similar to the ones measured here – do have a causal relationship with various facets of firm performance (c.f. Bloom et al. (2013); Bruhn et al. (2018); Higuchi et al. (2019); Iacovone et al. (2021)). Further, these correlations remain robust even after controlling for a wide range of observable characteristics such as industry, skills, competition, governance and ownership (c.f. Bloom et al. (2019)).

We have focused on the similarity of the qualitative findings of the distribution and covariance of firm management and performance across different countries. Theory gives some guidance on the relative magnitudes of the size-management relationship. An important way for countries to grow and increase aggregate productivity is to move inputs towards more productive firms, which empirically are often are those with greater adoption of structured management practices. This process of "creative destruction" is a fundamental dynamic of industrial economies. Even in the absence of general improvements across firms, reallocating economic activity in this way is likely to raise the weighted average management score. While strong institutions have long been considered crucial for creating the environment where this is possible (c.f. North (1991)), market frictions which impede this reallocation of resources are likely to reduce country-wide aggregate productivity.[4]

We leave a battery of additional tests to the Appendix in Supplemental Materials, where we examine additional data patterns in non-manufacturing sectors, alternative minimum business size thresholds and the use of firms vs. plants and alternative weighting schemes. All the results here are robust to these alternative approaches.

In this paper we have described our international effort to measure productivity-related structured management practices in a systematic way across different businesses and countries. We have documented robust empirical regularities observed in every country: businesses with more structured management practices tend to also have better economic performance as measured by productivity, profitability, exporting, or size. The similarity of these relationships across countries is striking. It suggests that management is a form of intangible capital that could be very important in understanding the wealth of nations in addition to the more traditional measures such as capital investment and skills.

We also find substantial variation in our management score and that the firms with more structured management practices are also larger (i.e. more jobs and higher sales), with the

[4]While the MOPS combined data is not well suited for cross-country comparisons, as we note in section C.2, we provide supporting evidence of this pattern in Appendix Figure S.4.

strength of the management-size relationship being weaker in countries with weaker market forces (e.g. Pakistan and Russia) compared to those with fewer frictions (e.g. Denmark and the US).

Going forward, we hope these results encourage governments to regularly collect such information on management and use it alongside their other measures of national performance. We are making the moments of the data in the paper publicly accessible for use by other researchers and policymakers in order to test further hypotheses on the causes and consequences of management practices.

3 Methods and materials

3.1 Measuring management practices

Our measures of structured management practices come out of earlier work (see Bloom and Van Reenen (2007)) on the World Management Survey (WMS). We focus on a set of practices that are likely to increase the efficiency of producing the set of goods a firm is currently making. These practices cover three main areas: monitoring, goal-setting and human resources. Extensive discussions with business practitioners and management scholars led to a common set of relatively uncontroversial practices, such as having relevant Key Performance Indicators (KPIs) and keeping track of them regularly, considering reasonable factors when setting targets and communicating them throughout the organization, and having a system in place to identify workers that are performing well and those that need help to improve. The questions in this study were modelled on this work and we label management practices as "more structured" when they are more formal, frequent, specific, and/or explicit. For example, collecting data on some KPIs (as opposed to none) and basing promotion on the results of those KPIs are designated more structured practices. There is now a substantial body of experimental and non-experimental evidence on how these are likely to be causal determinants of improved firm performance (e.g., see Scur et al. (2021) for details on the original tool and a survey).

The original WMS uses in-depth interviews with open-ended questions that take about an hour to complete, so although the data is rich, it is very expensive to collect and thus harder to scale. For the management surveys in this study, we allow respondents to select from a closed set of responses in multiple-choice format. This enabled us to scale the survey to obtain much larger sample sizes and also made it feasible for national statistical agencies to collect such data as part of their regular activities at reasonable cost.

The monitoring section of the survey asked firms about their collection and use of information to monitor and improve the production process. For example, the survey asked, "How frequently were performance indicators tracked at the establishment?" with response options ranging from "never" (lowest score) to "hourly or more frequently" (highest score). The targets section asked about the design, integration and realism of production targets. For example, the survey asked, "What was the time-frame of production targets?", with answers ranging from "no production targets" (lowest) to "combination of short-term and long-term production targets" (highest). Finally, the human resources section asked about non-managerial and managerial bonus, promotion and reassignment/dismissal practices. For example, the survey asked, "How were managers promoted at the establishment?", with answers ranging from "mainly on factors other than performance and ability, for example tenure or family connections" (lowest) to "solely on performance and ability" (highest). For a detailed overview of the surveys used in this study, see the Supplemental Materials.

In our analysis, we aggregate the results from these questions into a single measure: the unweighted average of the score for each of the questions, where the responses to each question are first scored to be on a 0-1 scale. Thus, the summary measure is scaled from 0 to 1, with 0 representing an establishment that selected the category which received the lowest score (little to no structure). We refer to this indicator as the "structured management score", and the scoring rubric is identical across all countries.

This paper includes data from surveys in 14 countries of management practices in North and South America, Europe, and Asia. The first survey was the Management and Organizational Practices Survey (MOPS) conducted in 2011 by the United States Census Bureau in the manufacturing sector for reference year 2010 (and subsequently for 2015 and 2021). The content of the US MOPS forms the starting point for the surveys conducted in China, Croatia, Denmark, Finland, Germany, Italy, Japan, Mexico, the Netherlands, Pakistan, Russia, the United Kingdom, and Uruguay.

The US MOPS includes 16 questions on the use of structured management practices related to monitoring, targets, and human resources. Ten of the other countries (China, Denmark, Finland, Germany, Japan, Mexico, the Netherlands, Pakistan, Russia, and Uruguay) use the same 16 questions, while the remaining three countries drop or combine selected questions. In general, the questions are translations of the US MOPS, although in some countries (Italy, Mexico, Pakistan, and the UK) the content underwent additional cognitive testing and/or pilot survey evaluation.

3.2 Data collection methods

Like the US MOPS, the surveys in Finland, Italy, Japan, Mexico, Pakistan, the UK, and Uruguay were conducted by national statistical agencies, other governmental organizations, or central banks. Other studies were conducted by inter-governmental organizations (Croatia, Russia) or academic and research programs (China, Denmark, Germany, the Netherlands). In some cases, data were collected as a module of larger surveys or statistical programs. In others, stand-alone surveys were conducted. The US MOPS collects data at the establishment level, as do the Finnish, German, Japanese, and Pakistani surveys. The other surveys collect data at the firm level. The vast majority of establishments are single site firms, so this is not a major issue, but we show that the results do not hinge on the unit of analysis (plant vs. firm) in robustness tests.

The US, Mexico and Uruguay achieved very high response rates — approximately 71%, 90% and 79%, respectively — in large part because response to these surveys was required by law. For surveys that were not mandatory, response rates were lower, averaging 32%. We show that our results do not hinge on such sampling issues in robustness tests. The management data is matched to other data on business performance, either collected alongside the management data or from linked survey, administrative, or publicly available data.

The collection methodology also varied to some degree across studies. The US and German MOPS were conducted via mail or online response forms. Japan and the UK had a mail response. Denmark, Finland, the Netherlands and Uruguay used exclusively online response forms. China, Croatia, Italy, Mexico, and Pakistan used in-person enumerators or hand-delivery and collection of surveys. Italy and Russia conducted telephone interviews.

3.3 Comparability

3.3.1 Comparability across sectors

We focus on the manufacturing sector because it is one of the most comparable sectors across countries. Producing a shirt is more similar than producing a consultancy report. Manufacturing is also a sector where tangible and clear input and output measures are generally well-recorded, and these are also helpful to compare across countries.[5] Nonetheless, many of the practices measured in the surveys are applicable across sectors. A number of

[5]This is one of the reasons the US Census Bureau often treats manufacturing as a test-bed for economic measurement. Of course, there may be substantial differences in the use of capital across these countries, but the core process of, for example, sourcing the textile inputs, cutting them into the required shapes, sowing them together is quite consistent.

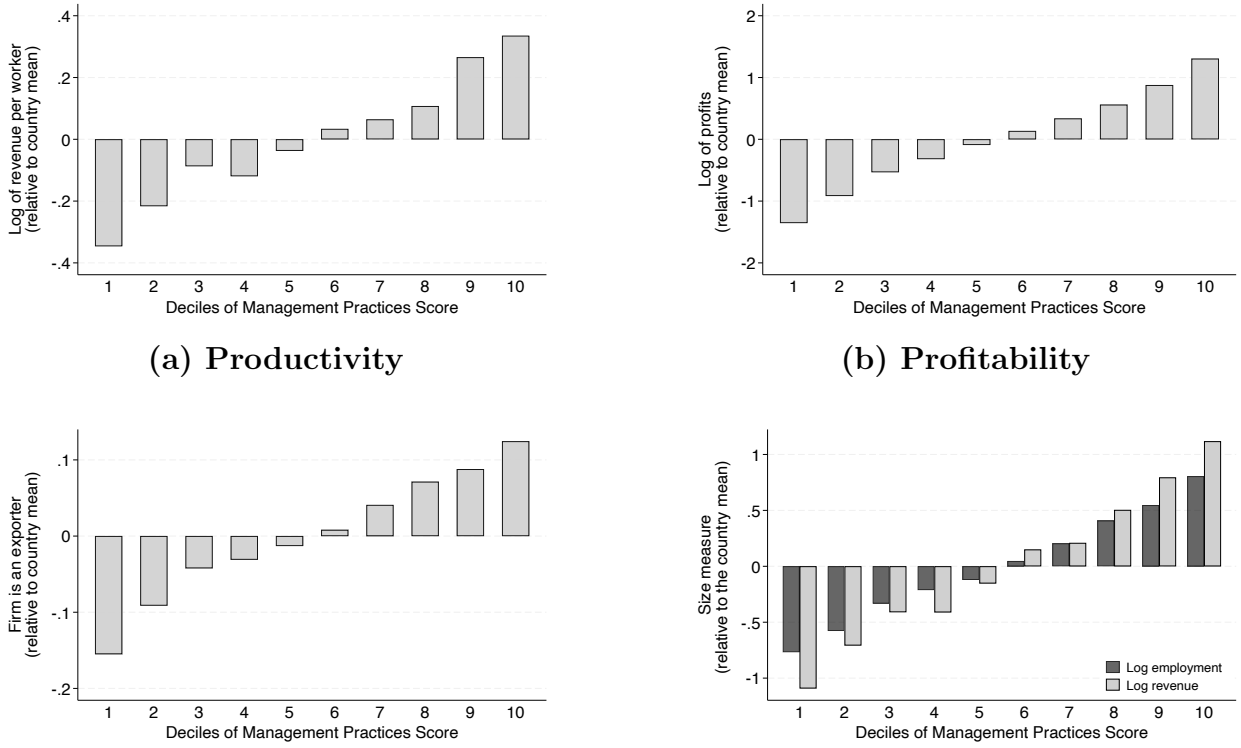
countries conducting MOPS did not restrict their survey to manufacturing and include other sectors, such as services and retail. This explains the relatively smaller sample sizes from some of the countries included in our analysis: surveys were run drawing a (stratified) random sample of firms from their respective economies, and manufacturing is not the largest sector of every country. For example, the Danish MOPS sample includes almost 4,500 firms but the manufacturing sector only makes up only about 8-10% of the Danish economy. We also show the robustness of our key findings to non-manufacturing for a sub-sample of the countries where this is available.

3.3.2 Comparability across countries

Achieving comparability across countries is harder than comparability across sectors within a country. The WMS methodology has several checks in the data collection process to be able to do so, including back-translation of survey tools, common training of analysts, common calibration exercises and multi-lingual analysts participating in interviews in other languages. In self-respondent questionnaires like MOPS this poses a much harder challenge, primarily because it is impossible to verify common understanding at scale. Cognitive testing is an important part of survey development as it verifies that the questions drafted by the researchers are understood as intended by the managers reading them, but it is inherently a "within-language" and "within-culture" exercise. The original MOPS was cognitive tested with US respondents, so direct-translations might miss nuances that could only be identified via country-specific cognitive testing. Thus, it is difficult to strip the measures of country-specific biases that naturally arise when scores are self-assigned rather than independently assessed. As our combined data is not well suited for cross-country comparisons, we include in the Supplemental Materials results from the WMS, whose management scores are internationally comparable (but whose sample sizes are smaller). The patterns are intuitive and the WMS country scores ranked similarly to a country's productivity and GDP per capita.

Exhibits

Figure 1: More structured management practices are associated with better firm outcomes across a range of measures

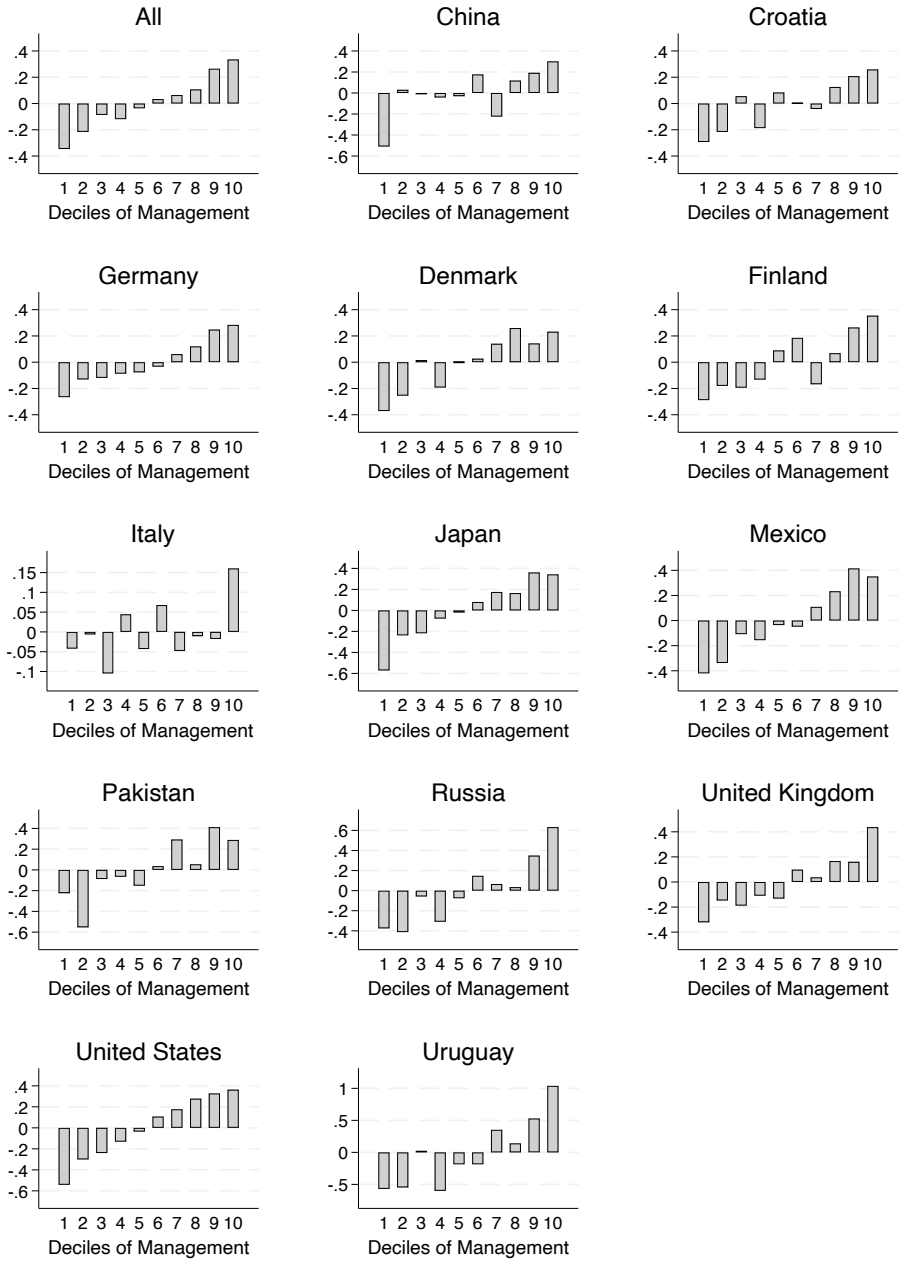


(a) Productivity **(b) Profitability**

(c) Exporter **(d) Size**

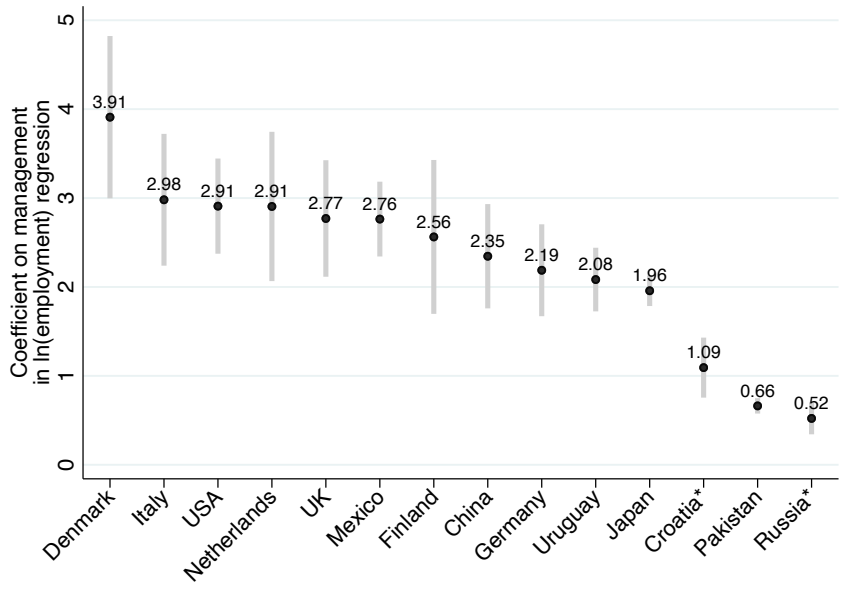
Notes: *The x-axis divides firms into country-specific deciles of their management score. The vertical axes give, for each bin and relative to the country means: the average natural logarithm of productivity (defined revenue divided by employment), the natural logarithm of firm profits, the share of firms that are exporters, the size of the firm (measured as the natural logarithm of number of employees and the natural logarithm of revenues). These graphs average across all individual versions of these graphs at the country level. Panels (a), (b), and log revenue in panel (d) exclude The Netherlands for lack of performance data. Panel (c) excludes Denmark for lack of data on exporting activity. The number of observations for each country in the original datasets (manufacturing sector only) are: China = 1,320; Croatia = 314; Denmark = 743; Finland = 582; Germany = 1,927; Italy = 1,126; Japan = 10,081; Mexico = 3,729; Netherlands = 377; Pakistan = 11,159; Russia = 978; UK = 1,329; US = 35,000; Uruguay = 550.*

Figure 2: More structured practices consistently associated with better productivity across countries



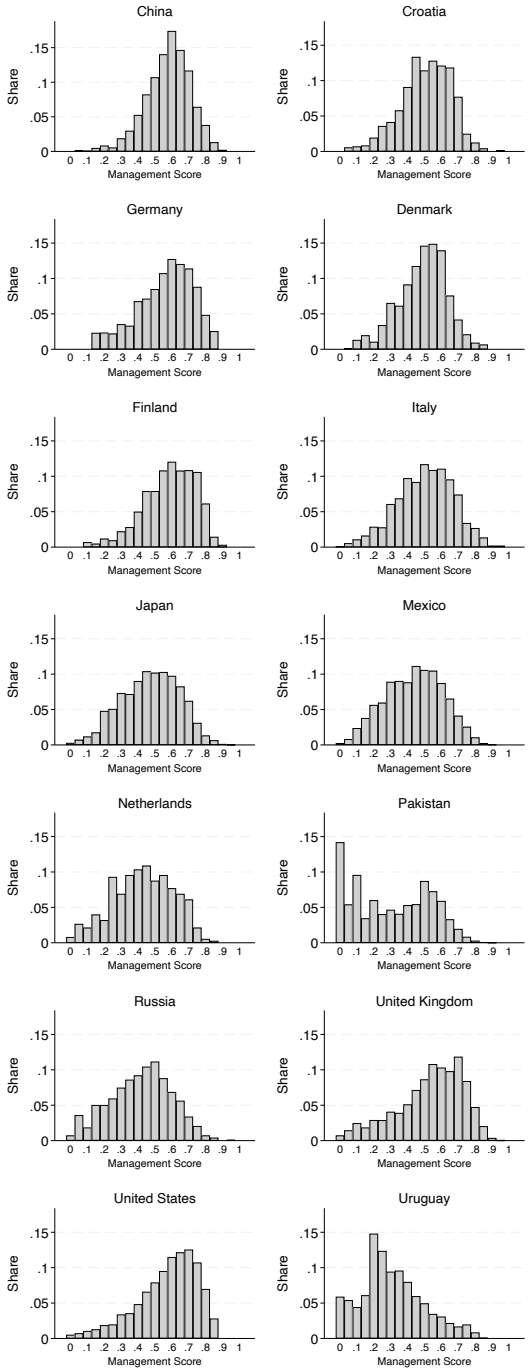
Notes: *The x-axis divides firms into country-specific deciles of their management score. The vertical axis gives (the natural logarithm of) productivity - the mean level of revenue divided by mean level of employment in each of these bins. Number of observations for each country in the original datasets (manufacturing sector only): China = 1,320; Croatia = 314; Denmark = 743; Finland = 582; Germany = 1,927; Italy = 1,126; Japan = 10,081; Mexico = 3,729; Pakistan = 11,159; Russia = 978; UK = 1,329; US = 35,000; Uruguay = 550. The Netherlands is not included in this analysis because it does not have reliable firm-level matched data on productivity.*

Figure 3: The strength of the size-management relationship is consistently positive



Notes: *Each circle is the coefficient on a country-specific OLS regression of log firm employment size on management. Grey bars indicate the 95% confidence interval. The regression was run on 20 observations per country, using the average employment and average management score within each vingtile. We include a table with the coefficients from the same regression using the microdata where available in the Appendix. Number of observations for each country in the original datasets (manufacturing sector only): China = 1,320; Croatia = 314; Denmark = 743; Finland = 582; Germany = 1,927; Italy = 1,126; Japan = 10,081; Mexico = 3,729; Netherlands = 377; Pakistan = 11,159; Russia = 978; UK = 1,329; US = 35,000; Uruguay = 550. *Croatia and Russia only include firms with 25-250 employees.*

Figure 4: Management practices adoption varies widely



Notes: *Histograms centered on the same scale. Number of observations for each country in the original datasets (manufacturing sector only): China = 1,320; Croatia = 314; Denmark = 743; Finland = 582; Germany = 1,927; Italy = 1,126; Japan = 10,081; Mexico = 3,729; Netherlands = 377; Pakistan = 11,159; Russia = 978; UK = 1,329; US = 35,000; Uruguay = 550. German data restrictions censored bins 1 to 3 (0-0.05, 0.05-0.1, and 0.1-0.15) and bins 19 to 20 (0.9-0.95 and 0.95-1).*

References

Bender, S., Bloom, N., Card, D., Van Reenen, J. and Wolter, S. (2018). Management practices, workforce selection, and productivity, *Journal of Labor Economics* **36**(S1): S371–S409.

Bertrand, M. and Schoar, A. (2003). Managing with style: The effect of managers on firm policies, *The Quarterly Journal of Economics* **118**(4): 1169–1208.

Bloom, N., Brynjolfsson, E., Foster, L., Jarmin, R., Patnaik, M., Saporta-Eksten, I. and Van Reenen, J. (2019). What drives differences in management practices?, *The American Economic Review* **109**(5): 1648–1683.

Bloom, N., Eifert, B., Mahajan, A., McKenzie, D. and Roberts, J. (2013). Does Management Matter? Evidence from India, *The Quarterly Journal of Economics* **128**: 1–51.

Bloom, N. and Van Reenen, J. (2007). Measuring and Explaining Management Practices Across Firms and Countries, *The Quarterly Journal of Economics* **122**(4): 1351–1408.

Bruhn, M., Karlan, D. and Schoar, A. (2018). The impact of consulting services on small and medium enterprises: Evidence from a randomized trial in mexico, *Journal of Political Economy* **126**: 635–687.

Brynjolfsson, E. and McElheran, K. (2016). The rapid adoption of data-driven decision-making, *American Economic Review* **106**(5): 133–39.
URL: *https://www.aeaweb.org/articles?id=10.1257/aer.p20161016*

Cornwell, C., Schmutte, I. M. and Scur, D. (2021). Building a productive workforce: The role of structured management practices, *Management Science* **67**(12): 7308–7321.

Foster, L., Haltiwanger, J. and Syverson, C. (2008). Reallocation, firm turnover, and efficiency: Selection on productivity or profitability?, *American Economic Review* **98**(1): 394–425.
URL: *https://www.aeaweb.org/articles?id=10.1257/aer.98.1.394*

Gibbons, R. and Henderson, R. (2012). What do managers do?, *in* R. Gibbons and J. Roberts (eds), *The Handbook of Organizational Economics*, Princeton University Press.

Giorcelli, M. (2019). The long-term effects of management and technology transfers, *American Economic Review* **109**(1): 121–52.
URL: *https://www.aeaweb.org/articles?id=10.1257/aer.20170619*

Higuchi, Y., Mhede, E. P. and Sonobe, T. (2019). Short- and medium-run impacts of management training: An experiment in tanzania, *World Development* **114**: 220–236.

Iacovone, L., Maloney, W. and McKenzie, D. (2021). Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia, *The Review of Economic Studies* **89**(1): 346–371.

Lucas, R. E. (1978). On the size distribution of business firms, *The Bell Journal of Economics* **9**(2): 508–523.

North, D. C. (1991). Institutions, *The Journal of Economic Perspectives* **5**(1): 97–112.

Scur, D., Sadun, R., Van Reenen, J., Lemos, R. and Bloom, N. (2021). The World Management Survey at 18: lessons and the way forward, *Oxford Review of Economic Policy* **37**(2): 231–258.

Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Syverson, C. (2011). What determines productivity?, *Journal of Economic Literature* **49**(2): 326–65.
URL: *https://www.aeaweb.org/articles?id=10.1257/jel.49.2.326*

Walker, F. (1887). The source of business profits, *The Quarterly Journal of Economics* **1**(3): 265–288.