Quality of Management of Firms in Turkey

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Abstract[2]

This paper examines the quality of management practices in Turkey and its relation to other firm-level characteristics such as firm performance, competition, and type of ownership. A key finding is that management quality is positively correlated with productivity and quality of jobs across subsectors of manufacturing. But the average score of management quality in Turkey is relatively low compared to peer countries. Factors such as firm size, level of human capital of the workforce, export intensity of the firm, openness to international markets, level of hierarchy in decision making, and degree of managerial autonomy are found to be important determinants of managerial practices in Turkey. Thus, improvements in these dimensions, through relevant policies and incentives, can have a positive effect on the quality of firm management going forward. Such improvements in management practices—particularly in the two dimensions where Turkey scores lowest: monitoring and targeting—can have positive effects on firm performance and lead to increases in the creation of quality jobs.

JEL Codes: D22, M11, M21, M12
Keywords: Firm Behavior, Labor Management, Business Management

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1.1. Introduction

The purpose of this paper is to provide a detailed analysis of management practices in Turkish manufacturing firms. We do it in four steps, first we compare the management practices in Turkish manufacturing firms with the rest of the world, second we present an overview of management practices in Turkey, third explain the determinants of variation in management quality across Turkish firms, and finally we present some evidence on the correlation between management quality and firm performance across manufacturing subsectors. This is the first quantitative study on the quality of the management practices in Turkey to the best of our knowledge.

Despite its potential important role in firm performance, management quality is relatively less emphasized in the empirical economics literature mainly because of limited data availability (See Bloom and Van Reenen 2007; Bloom et al. 2014; Mundlak 1961). A recent project, WMS, by London School of Economics and Stanford University academic staff organize management surveys globally, including in both developing and developed countries. The survey collects data on 18 questions regarding various management practices and gives scores between 1 and 5 which allows for a quantitative evaluation of management quality. This new data source is used to explore the quality of management practices in Turkey. Even though the sample is relatively small, it is nationally (and regionally) representative of the manufacturing sector in Turkey.

Examination of the data set reveals several interesting results, namely that management scores of Turkish manufacturing firms mostly fall below that of the developed countries in all dimensions of management practices. The average management score of Turkey is similar to the countries with a similar per capita income level. While there is a large variation in management scores across firms, there is a small tail of well-managed firms and a large tail of poorly managed firms in the distribution, with most firms clustered to the left of the (relative) good quality line. Thus, firms in Turkey have ample room for improvement with regard to management practices and a focused effort to support quality management improvements (through targeted advisory services, managerial trainings, and other initiatives) can have a huge positive impact in Turkey because the change could affect the whole cluster currently near the middle.

The rest of the paper is organized as follows: this introductory section provides a summary of findings, Section 3.2 provides details of the data, Section 3.3 shows the method of approach and empirical results, and Section 3.4 presents concluding remarks.

1.2. Data

The WMS is a joint project of the London School of Economics and Stanford University.[3] The survey was initiated in 2004, and has been conducted in over 34 countries up to now including both developed and developing markets. It is a firm-level and one-time cross-sectional data set for most of the countries in the sample. Most sample sizes range around the sample size in Turkey; higher in larger and more developed countries.

The purpose of the survey is to put a quantitative figure on the quality of management practices in firms across countries and sectors. The survey evaluates the actual management practices applied in the firm rather than reflecting the manager's own assessment. It is implemented by asking 18 open-ended

[3] See http://worldmanagementsurvey.org/, for more information about the WMS.

questions on key management practices. The questions are categorized into four areas: operations (three), monitoring (five), target (five), and people (five). Operations questions concentrate on lean manufacturing practices. The monitoring section asks questions about tracking and reviewing performance. Questions related to comprehensiveness and applicability of targets are provided in the targets section. Finally, the people management section focuses on incentives such as rewarding success and fixing failure.

For each of the 18 questions grouped into operations, monitoring, targeting, and people management, the interviewer gives a score between 1 and 5. If there is no practice in a management area, then the corresponding score of the related question is 1. Some informal practice corresponds to 2, formal practice with some weaknesses refers to 3, good formal practice without continuity/stability corresponds to 4, and best practice refers to 5. The details of the survey questionnaire are presented in Table 3A.1.

The sample of Turkish firms which is the main data source of this paper is drawn from the ORBIS database.[4] A random sample of 912 firms which employ 50 to 5,000 workers were selected to be interviewed by the WMS analysts. The response rate was over one-third,[5] and the final sample is as reported in Table 3.1.

Table 3.1. Response rates of the Turkish sample

Sample	# Firms	Share (%)
Interview conducted	322	35
Interview scheduled	16	2
Relevant person contacted	122	13
Company contacted	251	28
Refused	101	11
Not eligible	22	2
Other	78	9
Total	912	100

Source: WMS.

Note: 'Interview conducted' refers to the companies that were contacted and the interview was completed. 'Interview scheduled' corresponds to companies that scheduled an interview but did not complete it. 'Relevant person contacted' and 'Company contacted' report the firms that were contacted. 'Refused' means the manager refused the interview. 'Not eligible' refers to firms with less than 50 employees or a manager whose tenure was less than one year.

1.3. Results

Results derived from the WMS regarding management practices in the Turkish manufacturing sector are presented in this section. Results are shown in four subsections: first, an international comparison; second, detailed analysis of management practices in Turkish manufacturing firms; third, determinants of variation in management practices across Turkish firms; and finally, the link between management practices with productivity in Turkey.

1.1.1. An international comparison

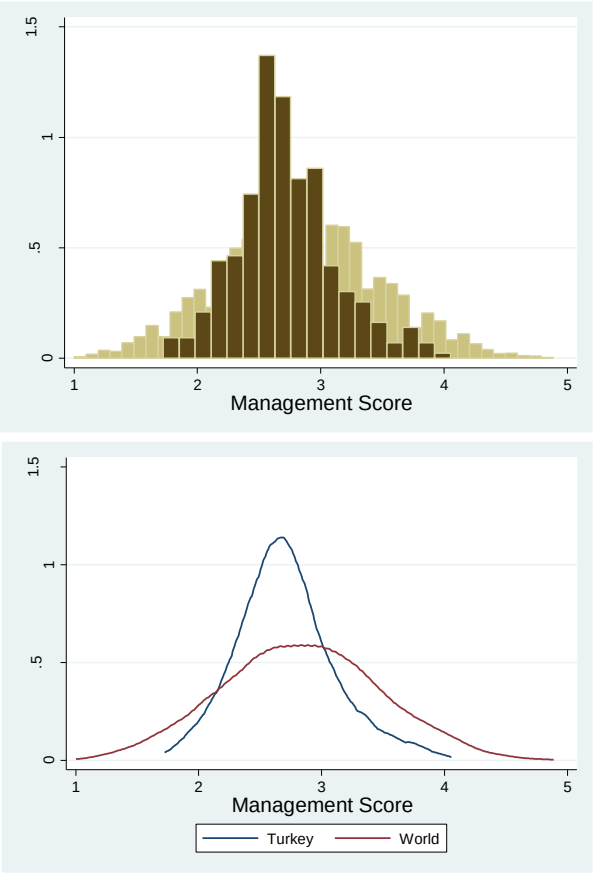
This section presents cross-country comparisons and highlights some important discrepancies between Turkish manufacturing firms and the rest of the world. The locus of Turkish firms within the global

[4] See http://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis for a detailed description of the ORBIS database.

[5] The World Bank and London School of Economics (LSE) are collecting a new round of data for the manufacturing sector in Turkey, aiming to have a sample that is at least four times larger to have subsectoral and subregional representation. The data collection will be completed in 2017.

distribution is shown in Figure 3.1. As shown, Turkish firms are located at a moderate position in the global distribution.

Figure 3.1. Global versus Turkish distribution



Source: WMS, Turkey 2014.

The distribution of Turkish firms is much thinner than the global one. This is also evident in the selected percentile values in Table 3.2. The bottom (top) percentiles of Turkish management scores are greater (smaller) than those of the global distribution. The thin distribution of Turkish management practices might be reflecting the relatively younger sample of Turkish firms, hence smaller variation in managerial choices. In particular, median age of firms is 19 in Turkey, which composes one of the youngest samples in the cross-country data.[6]

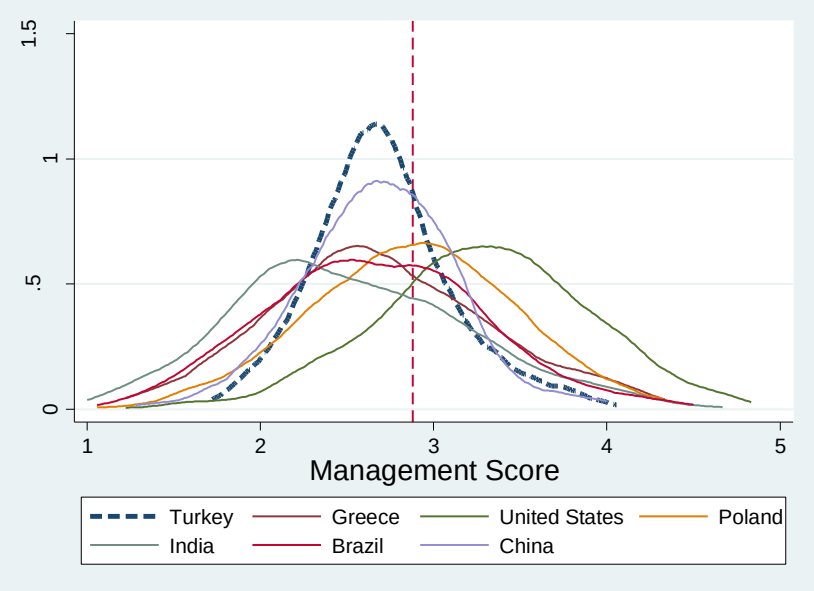
Table 3.2. Global versus Turkish distribution

	10th	25th	50th	75th	90th	Mean	Standard Deviation	# of Observations
Turkey	2.22	2.44	2.67	2.94	3.22	2.71	0.40	332
World	2.00	2.39	2.83	3.28	3.67	2.83	0.65	11,340

Note: The distributions are obtained from the WMS.

[6] *Source:* WMS. See Figure 3A.1 for the age distribution of firms across nations.

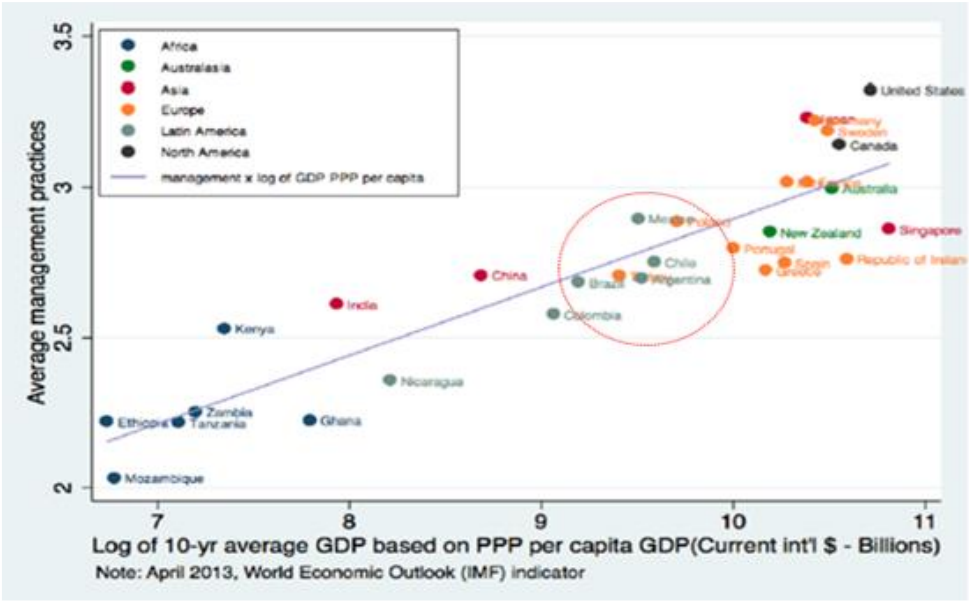
Figure 3.2. Distribution of management scores in selected countries



Source: WMS, Turkey 2014.
Note: The red dashed line represents the lowest quartile of the U.S. distribution.

Figure 3.3 illustrates a clear correlation between development level and average management score across countries. In line with this correlation, the management score of Turkish manufacturing firms mostly falls below that of the developed countries in all dimensions of management practices (Figure 3.4). Also, the average management score of Turkey is similar to that of the countries with a similar per capita income level such as South American and East/South European nations.

Figure 3.3. Per capita income and management score



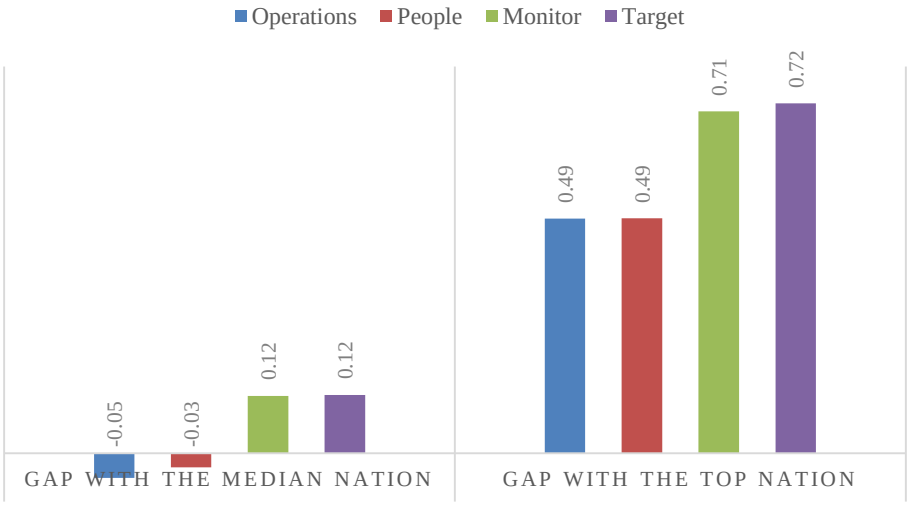
Source: WMS, Turkey 2014 and WMS across countries, various years.

The distribution of managerial scores across firms reveals that poor performance on average is mostly driven by a large tail of poorly managed firms, to the left of the distribution, which is common in developing countries. In particular, the fraction of firms performing below the lowest quartile of firms in the United States (which is used as the ultimate benchmark) ranges between 55 percent and 70 percent

in countries such as Turkey, Brazil, Argentina, Chile, Greece, Portugal, Spain, China, and India according to the WMS.

Comparing the four dimensions of management practices (operations, monitor, target, people) with the rest of the world reveals that Turkey's comparative advantage is in operations and people management. This means that relative to the other two dimensions—monitoring and targeting—Turkey scores better when it comes to lean manufacturing practices and human resource management. This is encouraging because it means that Turkish firms are making good use of resources (capital and human). Turkey's position is higher in these two dimensions of management practices in the cross-country rankings. For instance, Turkish firms' average people management score is aligned with advanced countries such as France, Italy, Ireland, and Australia and above New Zealand, Portugal, and Greece (Figure 3.2). However, there is still significant room for improvement in all areas of management in the Turkish manufacturing sector, and the particular deficient dimensions seem to be targeting and monitoring practices (Figure 3.4). A question-by-question analysis shows that the largest gap between Turkish firms and the top scoring nation is related to performance questions. For instance, questions on tracking performance and setting financial and non-financial targets can be done to improve how Turkish firms function.

Figure 3.4. Gaps in management score



Note: Data source is the WMS 2014. See Figure 3A.2 for the ranking of countries in management scores.

1.1.2. Highlighted facts on Turkish management practices

Regional and industrial distribution

Figure 3.5, panel a, illustrates the variation in management practices across regions in Turkey. While Akdeniz has the highest management score on average (2.83), Guneydogu Anadolu falls behind the rest of the regions by scoring 2.55 on average. But the difference between top and bottom performers is not dramatic. A common feature of all regions is that a large fraction of firms fall below the lowest quartile of the benchmark country (U.S. firms') indicating that even medium and relatively better performing firms in Turkey do not do as well as lower performance firms in the United States (Figure 3.4 and Figure 3.5).

Similar to the international patterns illustrated in Figure 3.5, there is positive correlation between development level and management score across Turkish regions. In particular, higher per capita income

levels in these regions are associated with greater management scores on average (Figure 3.5, panel b).[7] It is not possible through this analysis to discern the actual reason, but it is plausible that better managed firms purposely locate in wealthier regions to benefit from better services, opportunities, and higher levels of human capital available in these regions.

Figure 3.5. Average scores and per capita income level by region and industry

Note: Regions are disaggregated at the NUTS1 level. Industry codes are classified with respect to the U.S. Standard Industrial Classification (SIC) system at the two-digit level.

Variation in management scores across industries is much larger than that across regions in Turkey. It is worth noting that given the sample size, there are limitations in the sample representativeness at the subsectoral level, thus this part of the analysis is only indicative, not statistically representative. The average management score in the beverages subsector is 3.2, while it is only 2.4 in manufacturing of leather and related products. This large spread is present and common in all dimensions of management practices (Figure 3.5, panel c and Figure 3.6), indicating that improvements in all four management

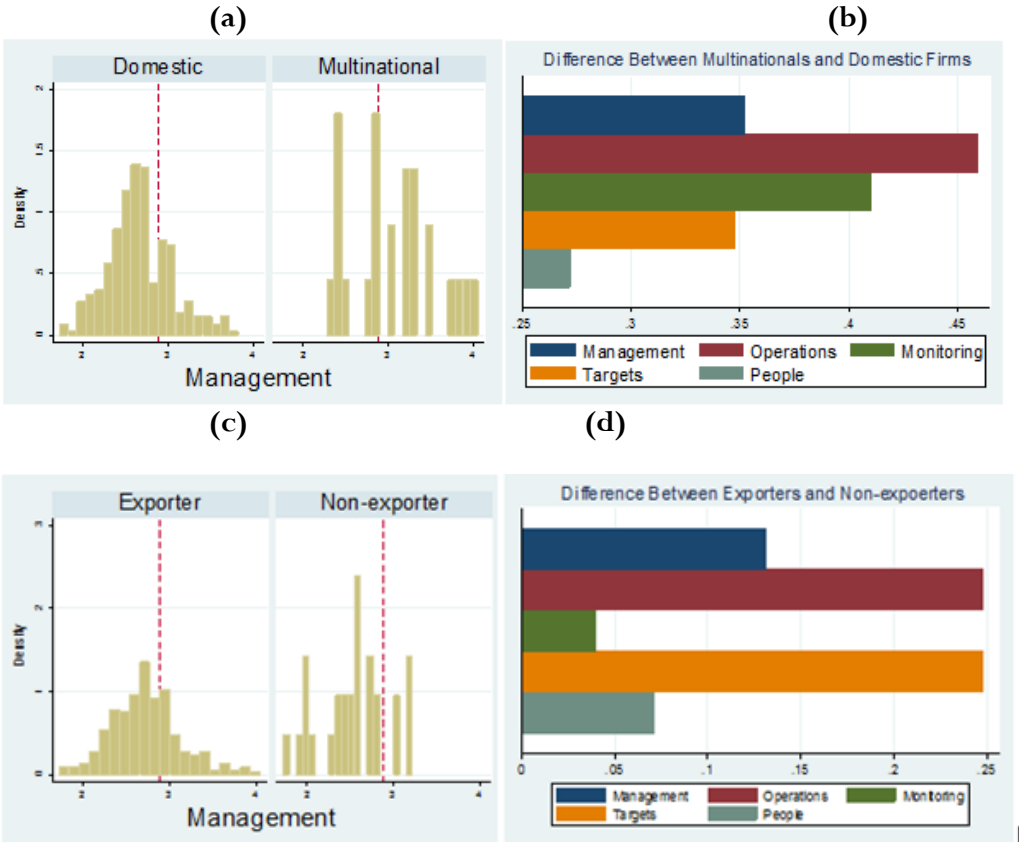
[7] The regional per capita income levels are borrowed from Taskin (2014).

dimensions in those subsectors scoring about 2.6 or below are needed. These include important subsectors such as food, apparel, electronic and equipment, and machinery manufacturers, among others.

Multinationals and exporters

In Turkey, multinational firms are managed better than domestically owned firms; this is not dissimilar to other countries (Figure 3.6, panels a and b). This observation is probably reflecting causality in both directions. First, the fact that better managed firms are more likely to become multinational, and second, that multinational firms follow good management practices more uniformly across cross-border plants (Bloom et al.,2009; Kostova and Roth, 2002). A similar correlation is observed between being exporters and their management score (Figure 3.6, panels c and d), indicating that firms that are connected to the global economy (or open to international markets) have increased incentives (and maybe also opportunities) to follow better management practices to remain globally competitive.

Figure 3.6. Multinationals versus domestic firms



Note: Size of the firm is controlled in panels (b) and (d).

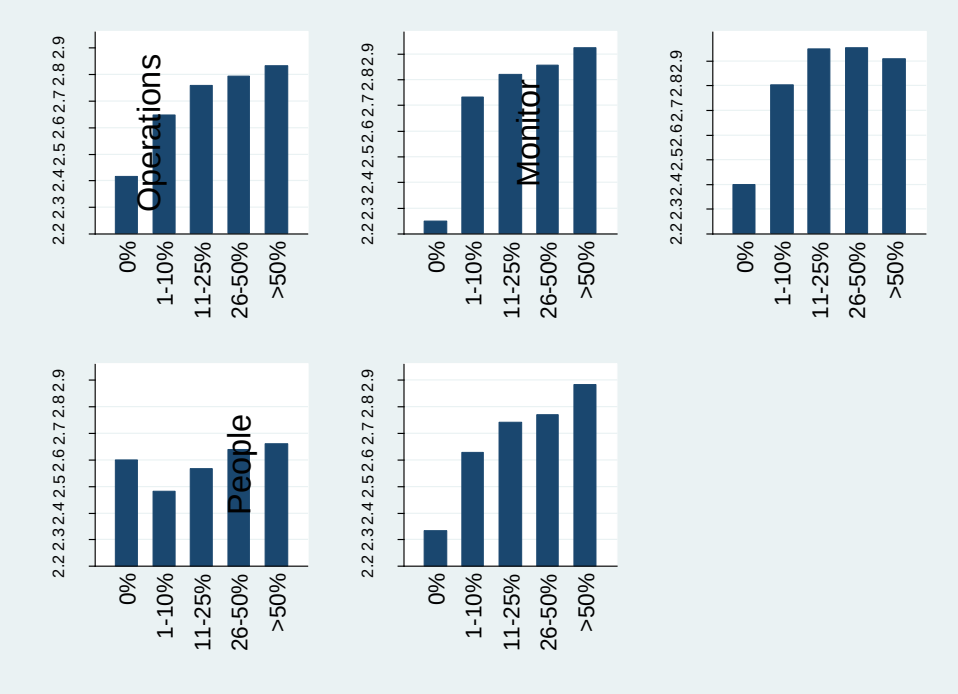
But there is also a clear difference between multinationals and export-oriented domestically owned firms, in favor of multinationals. Results show that multinationals in Turkey perform better (with an average score of 3.1) than non-multinational exporters (with a score of 2.7). But as mentioned, exporters still perform better than non-exporters in Turkey (a score of 2.5). This finding is consistent with the previous empirical evidence and theory (See for instance Helpman, Melitz, and Yeaple 2004).

Education level of workers

One would expect a positive correlation between the education level of the workforce and management quality in a firm, because well-educated managers are more likely to appreciate the value of good management practices and workers' ability to adapt and implement the practices is associated with their

education level. Indeed, this is what is observed in the Turkish sample of the WMS. The education level of the workforce, including managers, is positively correlated with the management score of the firm. These differences are illustrated in Figure 3.7. This fact remains true even after taking into account (controlling in the regression estimation) the size of the firm and other factors.[8] The horizontal axis represents the percentage of workforce with a university degree. For example, in operations, this means that firms with no highly educated workers have scores as low as 2.2 (operations), whereas when the percentage of highly educated workers is more than half, the score increases to 2.9 in this dimension.

Figure 3.7. Education versus management score



Note: 'Management' is the average of all questions, while others are averages of relevant questions on operations, monitoring, targeting, and people management.

The overall education level of the Turkish workforce remains lower than in comparison with more advanced countries; thus this may explain some of the difference observed between the score for Turkey and more advanced economies.[9] But it is also apparent from the results that the knowledge of good management practices among Turkish managers is also low. Therefore, some basic business education/training may have substantial value added to the management practices of firms in Turkey.

Lack of knowledge on good management practices

Manager's knowledge on good management practices is shown in the literature to be an important factor in determining quality of management. This finding is also consistent in Turkey, where the managers knowledge of good standards of management practices is positively correlated to the overall score. But there is a risk that managers do not know that they lack knowledge of good managerial practices, and may overestimate their natural abilities for management and forego formal training. In fact, this is true in Turkey. The WMS asks managers the following question to evaluate their knowledge on good practices: "Excluding yourself, how well managed would you say your firm is on a scale of 1 to 10, where 1 is worst

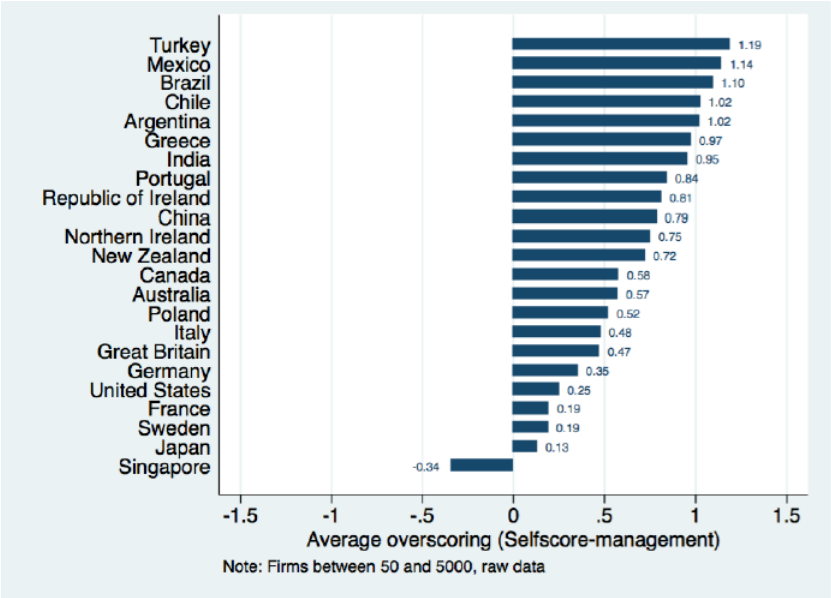
[8] We present regression results in Section 3.3.3, in particular see Table 3.3 for statistical significance of factors on management scores.

[9] Figure 3.8 presents the lack of knowledge among managers in Turkey and the rest of the world. See OECD (2014) for a comparison of education among OECD countries including Turkey.

practice, 10 is best practice and 5 is average?" Answer to this question on average is 7.8, 7.9, and 7.4 in overall, operations, and people management dimensions, respectively.

The self-score is scaled in line with the scale of actual scores and then the self-score is subtracted from the actual score of the firm to obtain an overestimation measure. As shown in Figure 3.8, Turkish managers are on the top with regard to misinterpreting their own management practices. The distribution of self-scores against actual scores reveals that most of the managers across countries in the sample are unaware of the fact that their own practices are suboptimal. But overestimation is most apparent in Turkey and various countries in Latin America. This is probably an important factor limiting improvements in management practices in Turkey; fortunately, such limitations can be overcome through formal management training.[10]

Figure 3.8. Lack of knowledge



Ownership

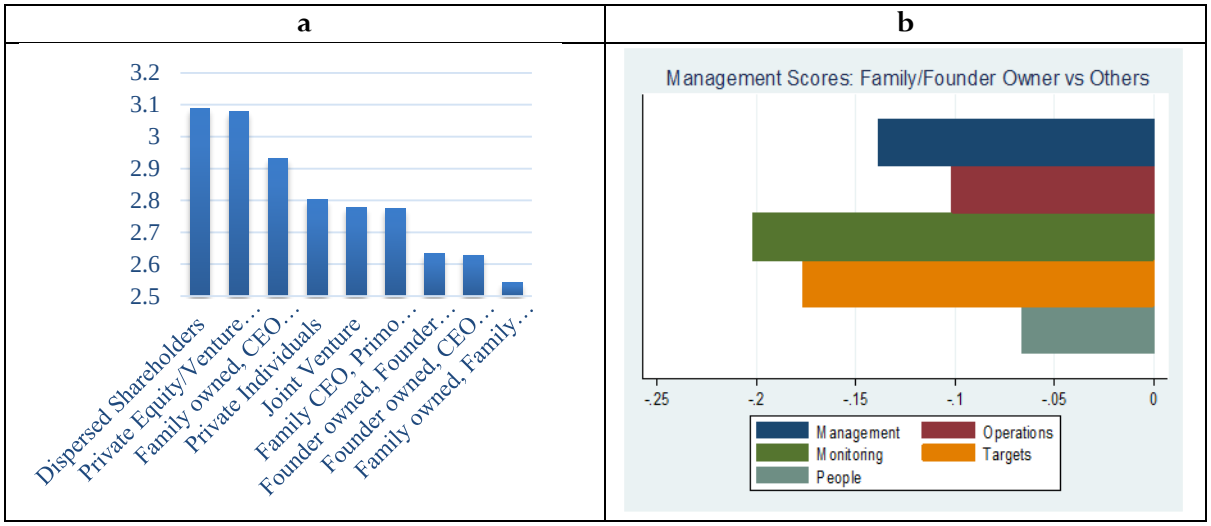
In the WMS, firms are categorized with respect to various different ownership types including dispersed shareholders, family ownership with and without an external CEO, founder ownership with and without an external CEO, joint venture, government ownership, manager ownership, private individuals, and private equity ownership.

In family- and founder-owned firms, the selection process of managers tends to be done based on family (or kin) relations, instead of being talent oriented. Therefore, one would expect a lower management quality in this type of firm in comparison with more meritocratic structures. Figure 3.9 shows the average management scores by distinct ownership categories. Dispersed shareholders and private equity-owned firms have higher scores, indicating that their management quality is superior to firms with other types of ownership. Family- and founder-owned firms seem to be bottom performers with regard to management practices. However, family firms with an external CEO perform much better than those with a CEO that is from the owning family.

[10] The large gap between self-assessment and actual score may also be interpreted as managerial overconfidence. Both theoretical and empirical literature show that managerial overconfidence has significant effects on corporate decisions and performance. See Deshmukh, Goel, and Howe (2013), Ben-David, Graham, and Harvey (2013), and Malmendier and Tate (2005) for example.

Panel b of Figure 3.9 plots the difference between average family- and founder-owned firms with a family/founder CEO and others on average (after controlling for size of the firm, analyst of the interview, and month and day of week that interview took place). The family- and founder-owned and managed firms perform particularly poorly in monitoring and targeting practices. These coefficients are statistically significant for two dimensions.

Figure 3.9. Ownership and management score



Note: Panel a plots the unconditional averages of each ownership category. Panel b draws the difference between family-/founder-owned firms with a family/founder CEO and other firms. We control for firm size, interviewer, and month and day of the week that interview took place.

Competition

In a more competitive environment, poorly managed firms are normally driven out of the market and existing firms try to consistently improve their management processes and overall management quality further to survive and thrive.[11] Therefore, higher levels of management quality are expected in a more competitive market. However, when firms face lower profits stemming from higher competition, they look to cut costs in different areas to survive, which can negatively affect planning for the long term and how staffing is done, among other important areas, thus changing the type of effort to manage, often focusing on the immediate survival rather than the medium- and long-term growth plan. Thus, the expected effect of higher competition on managerial effort is theoretically ambiguous ex ante, even though most of the empirical evidence shows that there is usually a positive correlation between the two.

In the WMS, competition is measured as the number of competitors viewed by the company in the relevant subsector. Figure 3.10 plots competition against management score. It reveals that there is no correlation between the two in Turkey. Even after the estimation includes various control variables, there is no statistically significant relation between intensity of competition and quality of management.

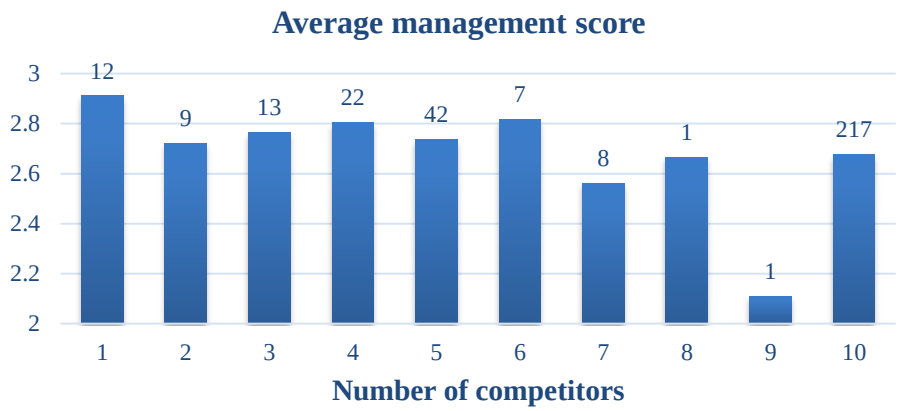
Such findings are in contrast with the existing empirical literature (See for instance Bloom et al. 2015; Van Reenen 2011). One potential explanation for this fact is the ownership structure of firms in Turkey. While the fraction of family- and founder-owned and managed firms is 72 percent in Turkey, it is much lower in countries where there is a strong correlation between competition and management scores.[12]

[11] See Schmidt (1997) for a theory of competition and management.

[12] According to the WMS, fraction of family-/founder-owned and managed firms is 24, 30, and 34 percent in the United States, the United Kingdom, and Germany, respectively. La Porta et al. (1997) argue that because of poor rule of law and underdeveloped financial markets, it is difficult to separate ownership and control from each other, therefore we observe more family-/founder-owned and managed firms in developing countries.

Sometimes, competition is not able to drive this type of poorly managed firms out of market because of their financial structure or indirect subsidies that are provided to the firm. They usually have less external finance and use family- or founder-owned capital in case of financial trouble, which help them survive under a highly competitive environment.

Figure 3.10. Competition versus management



Note: Sample sizes are presented on top of the bars.

Clustering in management practices

Principal components methodology[13] are used to measure whether some of the variables determine good management scores in all four management categories. The analysis finds that the first component explains most (62 percent) of the variation in the variables. In other words, there is a common factor of good management in all four dimensions, namely operations, people, targeting, and monitoring. The second principal component explains 18 percent of variation in variables, and it is positively correlated with operations and monitoring, whereas it is negatively correlated with targeting and people dimensions of management. One possible interpretation of this result is that some firms specialize relatively more in human resource management (people and targeting), while others specialize in operations and monitoring.

1.1.3. Decomposing the variance in management practices

This section provides a decomposition of variance in management practices across firms using the Shapley-Owen method, which is based on Shapley (1953) and Owen (1977).

Overview of the Method[14]

This is a common method in the cooperative game theory literature—Shapley value—used to estimate the contribution of various factors in explaining the variation in management practices.

Shapley value is a solution concept in coalitional games which assigns a unique distribution of total value generated by a coalition of all individuals in a society. It distributes the total value among all coalition

[13] Principal component analysis (PCA) is a statistical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components (or sometimes, principal modes of variation). Each component is orthogonal to the other.

[14] We repeated the same exercise with Fields (2003) regression-based decomposition method and obtained similar results. Results are available upon request.

participants. A coalitional game is defined by a set 'N' of players, and a function 's' which maps each subset 'C' of 'N' to real numbers. In this game, Shapley value of a player 'i' is formally defined as follows:

$$s(i) = \sum_{C \subseteq N \setminus \{i\}} \left(\frac{|C|!\,(|N| - |C| - 1)!}{|N|!} \right) (s(C \cup \{i\}) - s(C))$$

In simpler words, the share of each individual 'i' is calculated by his/her marginal contribution in all possible subcoalitions $C \cup \{i\} \subseteq N$. Average contribution of an individual is calculated by summing up the corresponding marginal contributions and dividing by the number of possible permutations of corresponding coalitions which is equal to $\frac{|N|!}{|C|!(|N|-|C|-1)!}$. Owen value applies an analogous solution concept by using groups instead of individuals.

A similar method is used to calculate the contribution of each regressor and some regressor groups (such as groups of dummy variables) in an econometric model in explaining the variation of the dependent variable. Each variable X_i, is taken out of the model where it is contained to calculate its marginal contribution as the difference between the R^2 values of the two models. Then, an average over the marginal contributions is obtained to get the average contribution of X_i. This exercise is repeated to calculate the contribution of variable groups (such as regional dummies, industry dummies) in the total R^2 of the full model.

To implement Shapley-Owen decomposition on management practices, various factors are regressed on management scores. The benchmark equation (or full model) includes the following variables: the number of employees, degree of hierarchy, age of the firm, export intensity, working hours, level of competition, a multinational dummy, a measure of managerial autonomy, level of employee education, ownership type dummies, regional dummies, and industrial dummies as explanatory variables. There are controls for noise variables such as differentiations between interviewing analysts, month of the year, day of the week, and time of the day that interviews were held, duration of the interview, and seniority, gender, and tenure of the manager that was interviewed.

Results

Table 3.3**.** Determinants of management practices presents the estimated coefficients of the benchmark model. The results are consistent with the illustrative figures presented in the previous section. In particular, size of the firm, human capital of workforce, export intensity, and multinational structure are positively correlated with management score. In addition, higher levels of hierarchy and greater degrees of managerial autonomy are also associated with better management scores. However, in contrast with most of the previous literature, competition is not correlated with the management score of firms.[15]

Firm size is also considered to be a measure of performance as better-performing firms tend to grow more than others (Lucas 1978). A positive and statistically significant correlation between management score and number of employees is evident, even after controlling for several key firm-level variables (Table 3.4).

Table 3.3. Determinants of management practices

	(1)	(2)	(3)	(4)	(5)
VARIABLES	**Management**	**Operations**	**Monitor**	**Target**	**People**
Log employees	0.079***	0.081*	0.117***	0.106***	0.025

[15] As we explained in Section 3.3.2, ownership structure in Turkey might be a reason for this observation.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	**Management**	**Operations**	**Monitor**	**Target**	**People**
	[0.026]	[0.046]	[0.038]	[0.037]	[0.027]
Export intensity	0.001**	0.001	0.001	0.002*	0.001**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Hierarchy	0.041*	−0.006	0.058*	0.025	0.054**
	[0.021]	[0.037]	[0.030]	[0.030]	[0.022]
Log age	−0.009	−0.020	−0.011	−0.043	0.026
	[0.026]	[0.045]	[0.037]	[0.036]	[0.027]
Managerial autonomy	0.057**	0.077 Empower ISKUR to help	0.065*	0.083**	0.024
	[0.026]	[0.046]	[0.038]	[0.037]	[0.027]
Working hours	−0.008	0.035*	−0.004	−0.013	−0.020*
	[0.011]	[0.019]	[0.015]	[0.015]	[0.011]
Competition	−0.073	−0.095	−0.119*	−0.076	−0.025
	[0.045]	[0.080]	[0.065]	[0.063]	[0.047]
Multinational	0.257***	0.421***	0.241*	0.159	0.297***
	[0.089]	[0.157]	[0.127]	[0.125]	[0.092]
Education (manager)	0.002*	0.003**	0.002*	0.000	0.002**
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Education (non-manager)	0.004**	0.002	0.004	0.004*	0.004**
	[0.002]	[0.003]	[0.003]	[0.003]	[0.002]
Ownership dummies	+	+	+	+	+
Region dummies	+	+	+	+	+
Industry dummies	+	+	+	+	+
Observations	326	326	326	326	326
R-squared	0.49	0.37	0.44	0.38	0.44
Note: Standard errors in brackets. *** p < 0.01, ** p < 0.05, * p < 0.1					

The Shapley-Owen decomposition of management scores is presented in Table 3.4. The explanatory variables all together explain 49 percent of variation in management scores. Highest contribution to the R-squared is attributed to industry dummies which account for 24.5 percent of the overall R-squared. While the type of ownership contributes 9.3 percent, multinational structure by itself accounts for 6.5 percent of R-squared. Regional disparities and the level of competition account for 5.4 and 2.0 percent of the model's total explanatory power, respectively. Firm characteristics such as number of employees, export intensity, age of firm, levels of hierarchy to make decisions, degree of manager's autonomy, and average working hours account for 12.8 percent of the overall R-squared, whereas human capital of workers explain 7.7 percent. These results reveal that the role of industry, type of ownership, multinational structure, human capital, and key firm characteristics such as export intensity, size, and level of hierarchy are all important in determining overall management scores.

Decomposing different dimensions of management separately unfold some interesting results as well. For instance, relative contribution of subindustry of operations matters most, across all subdimensions of management. The same is true for type of ownership of the firm. The importance of these two characteristics is quite intuitive as the subsector and type of ownership are important factors shaping the

overall processes that a firm uses and overall management practices. Location matters a lot as well, especially for operational matters and setting targets. The role of managers' and workers' education level is usually important in people management scores. This is exactly what is observed in Turkey when people management scores are decomposed (Table 3.4).

Table 3.4. Shapley-Owen decomposition

	Management	Operations	Monitor	Target	People
Ownership dummies	9.3	12.4	11.0	9.4	8.1
Region dummies	5.4	9.6	8.0	8.4	4.3
Sub industry dummies	24.5	28.1	24.4	27.5	21.6
Log employees	6.4	3.7	8.4	6.5	1.7
Export intensity	1.8	0.6	1.1	1.9	1.7
Hierarchy	4.4	0.4	5.3	2.3	5.5
Log age	0.2	0.5	0.5	0.7	0.7
Autonomy	0.7	0.6	0.6	2.3	0.2
Hours	0.3	2.0	0.1	0.5	1.9
Competition	2.0	1.5	3.0	2.1	0.3
Multinational	6.5	6.0	4.3	4.7	6.3
Workforce education	7.7	6.7	4.0	4.7	11.3
Others	**30.8**	**27.9**	**29.2**	**29.1**	**36.4**
Total	49.0%	36.7%	44.5%	38.4%	43.5%

1.1.4. Linking quality of management to performance

Productivity plays an important role as a performance measure on its own, and to benchmark against best performing companies, usually employing best management practices, which can serve as an example to be emulated.

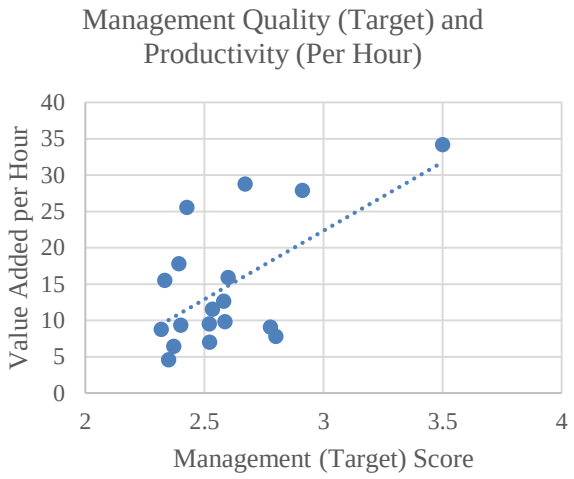
The relationship between firm quality of management and firm productivity has been studied extensively. The positive relation between the two is well established, irrespective of the measure of productivity (or performance) that is used. Studies show that quality of management can not only increase competitiveness and organizational effectiveness but also improve product quality, organizational performance and in turn profitability and overall productivity (Ortiz et al. 2006). Most studies find that the relation is unidirectional, quality of management practices help promote firm performance, thus investing in quality of management can have a positive effect on productivity.

The analysis in this section delves into the correlation between management quality and firm performance using subsector-level performance measures.[16] Because the sample of Turkish firms comprises the manufacturing sector only, productivity is used as the performance measure. Value added per worker and value added per hour in each subsector of the manufacturing sector is obtained from the Productivity Directorate General.

Figure 3.11 is a scatter plot of average productivity against average management score in each subsector in the manufacturing sector. The figure shows a clear positive correlation between the two variables at the subsector level in Turkey, which is consistent with firm-level results in other countries, as previously stated and cited from the broader literature (See Bloom et al. 2013; Bloom and Van Reenen 2010 for instance).

[16] We had to work with sector-level data instead of firm-level data in this analysis because the Turkish firms did not report their financial statements in the ORBIS data set, which is the main source of sampling for the WMS.

Figure 3.11. Productivity and management score



The positive relationship between subsectoral productvity and management quality scores remains for all four components. In all four cases, the steepness of the line is similar. Assuming that the relatonship is unidirectional, as found in the literature, it can be argued that productvity improvements can come about when firms make meaningful improvements in each dimension, with a potentially bigger impact if improvemetns are made across all four dimensions.

Figure 3.12. Productivity and scores by each component

3.4. Summary and concluding remarks

The analysis presented in this paper shows that the management scores of Turkish manufacturing firms mostly fall below that of the developed countries in all dimensions of management practices. There is a large variation in management scores across firms, but the distribution is still thin in comparison with the rest of the countries surveyed. Interestingly, there is a large gap between the scores for self-assessment of managers and actual scores of their respective firms. This gap indicates that Turkish managers overestimate their own performance (or lack of knowledge) and as such, they are unlikely to undertake changes to their current practices.

There is a large cross-regional and cross-industry divergence in average management scores. The common feature is that the number of well-managed (in international standards) firms is limited in all regions and industries. But apart from regional divergence, there is also a clear divergence between firms exposed to the global economy and those that are not. For instance, exporters are better managed in comparison with the non-exporters, and multinationals are better managed than domestic firms.

One good management practice is to offer/have more managerial autonomy with regard to decision making such as hiring, sales, and production. Also, having higher levels of education for both managers and non-managers is correlated with higher overall management scores. The type of ownership is an important determinant of management, where family- and founder-owned firms are worse managed than other types of firms.

The econometric analysis also offers interesting results. Some firms specialize in monitoring and targeting, while others focus on operations and people management. The analysis shows that the most important factors in explaining the variation in management practices are the type of activity of the firm in the manufacturing subsector, firm characteristics (size, export orientation, autonomy, and age), type of ownership, education level of workforce, and multinational orientation. Interestingly, relatively larger fractions of variation in human resource management and operations management are explained by education level of workforce and activity of sector, respectively.

The findings adjoin to the empirical literature on the interaction between management practices and other firm-level features such as productivity, competition, and type of ownership. There is a positive correlation between management quality and firm performance is consistent with the existing literature (See Bloom and Van Reenen 2007 for instance). Another interesting observation is the significant impact of ownership type on management practices, which is also a common result in the recent empirical literature (See for instance Bertrand et al. 2008; Morck, Wolfenzon, and Yeung 2005; Villalonga and Amit 2006). Lastly, and perhaps most importantly, is that the management quality is positively correlated with productivity and quality of jobs across subsectors of manufacturing.

In summary, the analysis shows that Turkey seems to have some room for improvement with regard to management practices at least for two reasons. First, there is a small tail of well-managed firms and a narrow cluster of poorly managed firms in the distribution (with respect to international standards). Second, the gap between self-evaluated score and the actual score of the firms in Turkey is very large. It might be interpreted as lack of knowledge or overconfidence, and it is probably a limiting factor to adopting good management practices.

Initiatives that promote the introduction and adoption of better management practices can help disseminate the information on best management practices among managers. A particularly important area of policy in Turkey might be to improve the overall education of the workforce as the level of workers' education is positively associated with the firm's management practices. Also, provide managers

opportunities for critical self-evaluation, so that managers can feel the need to consistently evaluate their practices and make necessary improvements.

Attracting multinational firms can also improve the management quality through spillover effects. Therefore, continuing to promote foreign investment in Turkey and the presence of multinationals can have positive effects on domestic firms. Because there is a positive correlation between the size of the firm and management quality, labor regulations which limit firms to reach their optimal size might be a negative factor in adopting best management practices. Therefore, adopting more flexible labor markets can also improve the quality of management across the country. Lastly, the owner-managed or founder-managed firms seem to be implementing inferior management practices in comparison with more professional/external-managed firms. Hence, transition into professional management structures may be a favorable strategy to adopt good management practices in Turkey.

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