

What Causes the Differences in Management Practices between US and UK? An Application of Decomposition Analysis on Firms across Countries

Yi Su^{1,2*}, Baoding Liu¹, Dan Li¹

¹School of Economics and Management, Harbin Engineering University, Harbin, China

²School of Management, University of Bradford, Bradford, UK

Email: *suyi@hrbeu.edu.cn

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Abstract

The aim of this study is to examine what makes the differences of management practices between the United States and the United Kingdom using decomposition analysis. First, this study analyzes the determinants of management practices, and does the empirical research. Determinants of management practices are concluding product market competition, ownership, firm age, human resources (education, working hours, and payment). Essentially we argue that the differences (if any) between US and UK's management practices can be expanded by product market competition and education. The results demonstrate that education (managers' degree and employees' degree) is positively correlated with management practice gap, but the impact of competition on management practices gap is negative. In particular, employees' degree variables explained approximately 70% of the management gap.

Keywords

Management Practices, Gap, Decomposition Analysis, US, UK

1. Introduction

As creating value is the most primary pursuit of a firm [1], economists pay more attention on the relationship between firms' resources and value creation [2] [3]. On the one hand, resource-based view (RBV) suggests that possessing rare and inimitable resources can develop the competitive advantage [4], and provides the basis for sustainable value creation [5]. The effectiveness of resources (skilled

employees') will be limited, however, if they are not motivated to perform their jobs [6]. On the other hand, contingency theory (the alternative perspective) suggests that all management practices are contingent on the firm's environment. The key concept in a contingent proposition is fit [7], and the fit is between environmental contingencies and internal configurations may lead to greater understanding of how resources can be managed to optimize value creation, because firms do not operate in a vacuum [3] [8]. Contingency theory has been used in the area of business strategy [9] [10] [11], quality management [12], organizational change [13]. Some new theories, such as structural contingency theory [7], which examines whether context-structure relationship affected performance, and a contingent resource-based view [9] [14] [15], has been developed. In this view, every firm is adopting its own best practices given the circumstance in which it finds itself, but contingency is not the whole story [16].

People have long puzzled over the astounding phenomenon that even possessing the same resources (physical assets, technologies, and human skills) and facing similar environmental (country and industry), values the firm created vary substantially [9] [16]. This means in the order to guarantee the development of competitive advantage and the creation of value [11] [17], firms need to adopt new machinery or technological innovations [16] [18], and find a right way to manage (accumulate, combine, and exploit) the resources [19] [20]. Despite the critical role that the management practices plays, few studies have carefully examined its implications [21]. The main reason that scholars have tend to shy away from this is that it is hard to explain how to measure management across countries [22]. Bloom and Van Reenen (2007, 2010) have developed a new survey methodology, which is an interview-based evaluation tool, to measure management practices in three areas (monitoring, targets, and incentives).

The management practices play a critical role, especially the management practice across countries. More and more enterprises are increasingly placing importance on management practices in an attempt to improve their competitive position. There is little empirical evidence regarding the differences of management practices between countries. One of the main contributions of this study is the decomposition of management practices, and focuses on what makes the differences of management between US and UK. The impact of competition on management practices is inconclusive, partly because of the method's problems but mainly because of the data we used. Beyond that, comparative static and even dynamic studies of management practice are required.

The remainder of the paper is organized as follows. In Section 2, the determinants of management practices are discussed. Section 3 contains linear regression equation model, decomposition analysis model, and data issues. In Section 4, results of decomposition analysis are presented. Finally, Section 5 draws the main conclusions.

2. Determinations of Management Practices

2.1. Product Market Competition

Management practices are likely to lead to improved firms' performance, but this is subject to one qualification that relates to the degree of intensity of market competition [23], which is a key situational factor in the total number of factors that comprise the firm's environment [24]. The rapid development of globalization of product markets [25], which means the competitive threats, challenges, stress [26] and higher risk [27], has caused manufacturing firms to search for an appropriate management technique to enhance the survive rate (Mia & Clarke, 1999) [28]. "Monopoly... is a great enemy to good management" [29]. That means the degree of product market competition faced by a firm likely influences its management practices [6] [30] [31]. Strong product market competition appears to boost average management practices through a combination of eliminating the tail of badly managed firms and pushing incumbents to improve their practices. Competition encourages managers' to avoid wasteful investments [32], and has a significant effect on its inclination to management innovate [33]. Progressive management practices and advanced organizational methods are more prevalent in countries and industries where product market competition is strong [16] [34] [35]. Information asymmetry between managers' and the market is lower and stock-price informativeness is higher in more competitive markets [6] [36]. In competitive markets it becomes easier to benchmark the performance of the managers' against the best practice among the competing firms [30], so reductions in slack resources due to competition constrain managers' discretionary behavior [37]. Greater competition also leads to a higher threat of liquidation, which leads managers' to increase equity and reduce debt [38]. In the case of regulated markets with few, if any, competitors, the owners have a limited ability to monitor their managers' by benchmarking the performance and management practices of their company against other competing companies [30]. Further, the greater discretion in decision-making managers' receive with greater competition gives them greater latitude to engage in such opportunistic actions as their actions are less observable or understandable due to their complex nature. Thus, the higher the intensity of market competition, the better a management must be.

2.2. Ownership

There are two theoretical perspectives, named agency theory and stewardship theory, provide a broader framework to explore the ownership and management issues [39]. Agency theory begin with the premise that managers' and owners (shareholders) may have divergent interests [40]. In addition, Stewardship theory, which has been presented as a useful framework to examine the ownership and management [41] [42], suggests that the interests of owner and manager can be coincide. In this paper, the firms are divided into institution ownership and non-institution ownership. On one hand, the managerial view, originated

from the agency theory, argues that firms under institution ownership struggle to exercise control on their managers', as an individual owner does not have strong incentives to monitor managers' [43] [44] [45]. Because of the inadequate information about managerial actions, the institution owned firms are typically managed badly. On the other hand, non-institution ownership firms, such as family owned firms, are typically much better managed [46] [47].

2.3. Firm Age

Firm age, how long a firm has operated, can let managers' have a sense of belonging and trust. Firm age is calculated as survey year minus the founding year [48]. It is used to capture any founding values [49] and maturation effects [6]. There is positive impact of firm age on management practice, consistent with the hypothesis of a progressive improvement of the managerial factor over time. The role played by firm age in shaping the behavior of family managers' over time, and plays a crucial role when a learning process is at work [50]. However, a progressive decline in managerial performance over time, supported by negative—albeit not significant—coefficients in older age cohorts.

2.4. Human Resources (Managers' and Employees')

The poor performance of management practices may be attributed to negligence in human resources [23] [51] [52], such as training and staffing selectivity [23] [53]. Selectivity in staffing, such as educated managers' hired, is positively related to management practices performance. New management practices are often complex and hard to introduce without the assistance of managers' or consultants with prior experience of these innovations [54]. Firms that more intensively use human capital, as measured by more educated workers (managers' and employees'), tend to have much better management practices. Education is strongly correlated with high management scores, whether one looks at the education level of managers' or of workers. We cannot infer a causal relationship from this association, of course, but it is plausible that managers' with an MBA or college education are more likely to be aware of the benefits of modern management practices like lean manufacturing. More surprisingly perhaps, is that worker-level education is also positively associated with management scores, suggesting that implementing many of these practices may be easier when the workforce is more knowledgeable. Our belief is that more basic business education, for example around capital budgeting, data analysis, and standard human resources practices, could help improve management in many nations [16].

Working hours and payment are also likely to influence management practices. Firstly, additional work hours may cause high work intensity or work pressure, which may result in fatigue [55]. The setting of working hours by owners tends to raise work demands above the optimal choice level for managers' [56]. Secondly, payment is also a core management practices influence factor. The public sector (such as state ownership firms) is locked into a pay structure that

limits the ability to link management salaries to performance [30], named performance-related pay [57], and always provides stronger job security. As for this, managers' may put less effort into their jobs and hence have less incentive to perform well. Managers' can expect their efforts to be fairly rewarded [58] [59], so firms can implement merit pay or incentive compensation systems that provide rewards to managers' for meeting specific goals. If not, managers' may engage in short-run cost-augmenting activities designed to enhance their non-salary income, or to provide other forms of on-the-job consumption [60] [61]. This occurs because as management's right to residual income decreases they appropriate income from other corporate sources in the form of assorted perks [40].

3. Model and Data

3.1. Linear Regression Model

The first step in specifying the linear regression equation model is to determine whether the product market competition, ownership, firm age, human resources (managers' and employees') are the determinations of management practices.

3.2. Decomposition Analysis Model

In order to examine the determinants of the management practices' gap between various kinds of firms in UK and US, we used the method of Oaxacae-Blinder decomposition [62] [63], by using Stata version 12.1. Since the management practices' gap reflects the differences in the group means of the outcome, it lends itself to the decomposition analysis of the group means of determinants. This methodology decomposes the observed group difference in outcome into two main components: the disparity associated with the differences in determinants and the disparity associated with the differential response by groups to those determinants [51]. It is often used to study labor-market outcomes by two groups (sex, race, and so on), and divides the wage differential between two groups into "explained" and "unexplained" part. Education and work experience are always used as the determinants in the "explained" part. The "unexplained" part also subsumes the effects of group differences in unobserved predictors [64] [65]. This method can also be useful in other fields, such as health inequalities [66], public health [67] [68], cross-country differences in obesity [69] [70], body mass [51], non-farm income [71]. In general, the technique can be employed to study group differences in any (continuous and unbounded) outcome variable.

The Oaxacae-Blinder decomposition was implemented in the following form:

$$\bar{M}_{US} - \bar{M}_{UK} = \bar{X}'_{US} \hat{\beta}_{US} - \bar{X}'_{UK} \hat{\beta}_{UK} = (\bar{X}'_{US} - \bar{X}'_{UK}) \hat{\beta} + \bar{X}'_{US} (\hat{\beta}_{US} - \hat{\beta}_{UK}) \quad (1)$$

where indices US and UK indicate US firms and UK firms, \bar{M}_{US} and \bar{M}_{UK} are the mean management practices for the respective firms, \bar{X} is the vector containing the means of the covariates, and $\hat{\beta}$ is the vector containing a weighted average of the estimated coefficients for US firms, $\hat{\beta}_{US}$, and for UK firms, $\hat{\beta}_{UK}$.

The Oaxacae Blinder decomposition decomposes the difference in management practices between two groups into those due to the group differences in means of explanatory variables and those due to the group differences in the estimated coefficients.

$$\bar{M}_{US} - \bar{M}_{UK} = (\bar{X}'_{US} - \bar{X}'_{UK})\hat{\beta}^* + \bar{X}'_{US}(\hat{\beta}_{US} - \hat{\beta}_{UK}) + (\bar{X}'_{US} - \bar{X}'_{UK})(\hat{\beta}_{US} - \hat{\beta}_{UK}) \quad (2)$$

This is a “threefold” decomposition. The first component, $(\bar{X}'_{US} - \bar{X}'_{UK})\hat{\beta}^*$, amounts to the part of the differential that is due to group differences in the predictors, that is called “endowment effect”. The second component, $\bar{X}'_{US}(\hat{\beta}_{US} - \hat{\beta}_{UK})$, measures the contribution of differences in the coefficients. The last component, $(\bar{X}'_{US} - \bar{X}'_{UK})(\hat{\beta}_{US} - \hat{\beta}_{UK})$, is an interaction term accounting for the fact that differences in endowment and coefficients exist simultaneously between two groups.

Not only is the total decomposition of the outcome differential into an explained part of interest, but also the detailed contributions of the single predictors or sets of predictors are subject to investigation. In the order to evaluate how much of the management practices’ gap is due to differences in product market competition, and how much is due to differences in education (managers’ degree and employees’ degree), we followed the method proposed by Yun (2005) which used to do the detailed decomposition.

Our model specification began with a base model of product market managers’ degree (Model 1), and then sequentially added employees’ degree (Model 2), and product market competition (Model 3), to assess to what extent the management practices gaps can be explained by these factors.

3.3. Data

This study adopted the following indicators as input variables: the product market competition (X_1), ownership (X_2), firm age (X_3), managers’ degree (X_4), employees’ degree (X_5), managers’ working hours (X_6), and managers’ payment (X_7). The product market competition (X_1) is measured with two commonly utilized indicators. The first indicator is subjective: managers’ told how many competitors they faced (X_{1a}). The second indicator is more objective in that it measured by imports as a share of domestic production (X_{1b}). The ownership (X_2) can be divided up ultimate ownership: including institution ownership ($X_2 = 0$) and non-institution ownership ($X_2 = 1$). The firm age (X_3) calculated as surver year minus the founding year. The managers’ degree (X_4) and employees’ degree (X_5) is measured by the percentage of managers’, who are with an MBA degree, and employees’, who are with college education, respectively. The managers’ working hours (X_6) are the average hours per week of all managers’. The managers’ payment (X_7) is log of CEO salary as reported in company accounts.

The output variables adopted in this study are as follows: management (Y), it is the average management score across questions and interviews. The final sample size comprises 441 American and British companies.

Summary statistics and sample sizes are presented in **Table 1**.

Table 1. Overview of the variables and summary statistics.

Number of observations:441		Outcome measure			Income measure				
US Firms	Management Practices	competition		ownership	Firm age	managers' degree	Human Resources		
		X _{1a}	X _{1b}				Employees' degree	hours	Payment
Minimum	1.61	0	-3.90	0	1.39	0	0.69	30	4.55
Maximum	4.83	3	0.70	1	5.34	40	4.55	80	8.04
Mean	3.32	2.47	-1.70	-	3.57	1.90	3.15	48.03	6.26
Std. Deviation	0.72	0.69	0.73	-	0.80	4.43	0.81	5.70	0.67
UK Firms	Management Practices	X _{1a}	X _{1b}	ownership	Firm age	managers' degree	Employees' degree	hours	Payment
Maximum	4.86	3	0.25	1	5.50	15	4.17	60	-
Mean	3.04	2.25	-1.02	-	3.31	0.73	2.32	44.20	-
Std. Deviation	0.81	0.97	0.59	-	1.04	2.02	0.81	6.40	-

4. Results

4.1. Linear Regression Equation Model

Regression analysis is used to investigate determinations of management practices. Regression results in **Table 2** show that all independent variables have positive effects on management practices except ownership, which has negative effect although not significant. The coefficient (-0.0447) suggests that institution ownership firms are better managed than non-institution ownership ones, but not significant. This is because that non-institution ownership including family ownership with an external chief executive officer, family ownership with a family chief executive officer, and other ownership. The inherited family-owned firms who appoint a family member as chief executive officer are very badly managed on average. There are two owner-manager conflicts, first owner-manager conflict is that shareholders wish to maximize profits while managers' may prefer various self-interested, nonprofit-maximizing strategies and that concentrated ownership obviates the problems created by these divergent interests [72]. This can be mitigated due to the large shareholder's greater incentives to monitor the manager [60] [73]. The second type of conflict is that the large shareholder may use its controlling position in the firm to extract private benefits at the expense of the small shareholders, and its incentives for monitoring the manager are small [74]. Because family management reduces and can even eliminate first owner-manager conflict, agency theory would predict a positive effect on the value of family management. Yet, this effect may be offset by the costs of family management if hired professionals are better managers' than family founders or their heirs [46] [47]. It may be preferable for owners of family ownership firms to recruit nonfamily professional managers' (Westhead &

Table 2. Determinations of Management Practices.

		Dependent variable
		Management Practices
Competition	X_{1a}	0.0463 (0.0848)
	X_{1b}	0.2912*** (0.0656)
ownership	X_2	-0.0447 (0.0971)
Firm age	X_3	0.0034 (0.0613)
Managers' degree	X_4	0.0223** (0.0099)
Employees' degree	X_5	0.1549** (0.0640)
Managers' working hours	X_6	0.0259*** (0.0080)
Managers' Payment	X_7	0.0622 (0.0731)
constant		1.5596** (0.6894)
F		6.93***
R-squared		0.2206
Adj R-squared		0.1887
VIF		1.14
Omitted Variables Test		0.19 (Prob > F = 0.9012)
Heteroskedasticity test		0.58 (Prob > chi2 = 0.4458)

Note: *, **, *** represents significance at the 10%, 5%, and 1% level, respectively.

Howorth, 2006) [75], and “Outside” managers’ can provide firms with expert advice, specialist skills, and resources that a family firm does not possess [44].

Part 1 of competition (X_{1a}), firm age (X_3) and managers’ payment (X_7) have positive effects on management practices, but they are all insignificant. The managers’ salaries of are consistent with the management practices. In more recent years, firms have made more flexibility managers’ reward systems, which is linking wages and bonuses to enterprise profitability [76] [77], in the order to get well management practices. Part 2 of competition (X_{1b}) and managers’ working hours (X_6) are both positively correlated with management practices and statistically significant at the 1% level. 1% increase in competition (X_{1b}) and managers’ working hours (X_6) brings up management practices scores by 0.2912 and 0.0259 percentage points, respectively. Exporting can be a good way to enhance the firms’ competition and the management practices. Exporting is considerably more complicated than domestic selling [78]. Exporting can make a manager express better management practices by many ways, such as gathering foreign market information [79]; learning about export tasks such as documentation and export financing [79]; hiring and training additional staff; foreign

market visits [80]; initiating and making appropriate decisions [80]; attempting to react quickly to unexpected opportunities and change [81]. Firms that export overseas are better-managed than domestic non-exporters [82] [83].

Managers' degree (X_4) and employees' degree (X_5) have positive effects on management practices, statistically significant at the 5% level. What surprising is that the coefficients (0.1549** and 0.0223**) suggests that employees' degree (X_5) plays a more important role in well management practice than managers' degree (X_4).

4.2. "Threefold" Decomposition

Management practices vary substantially across countries. In order to examine the determinants of the management practices' gap between various kinds of firms in UK and US, we used the method of Oaxaca-Blinder decomposition [62] [63]. First of all, we need to determine the determinants which may be better-suited to explaining difference between countries. These determinants of the management practices are competition (X_{1b}), managers' degree (X_4), employees' degree (X_5). Others, like competition (X_{1a}), ownership (X_2), firm age (X_3), managers' working hours (X_6), managers' payment (X_7), are more focused on differences on firm lever. Then we do the threefold decomposition model and detailed decomposition model to analysis the management practices' gap in UK and US.

Oaxaca first estimates two group regression models and then perform the decomposition. As shown in **Table 3**, all estimated decompositions are statistically insignificant, except the coefficients at the five percent level. The mean management practice score is 3.3526 for US and 3.1750 for UK, yielding a gap of 0.1776.

The "Coefficients" part reflects the increase of 0.2156, which is even more than the gap(0.1776), indicates that if UK firms applying US firms' coefficient, which means the degree of influence between competition (managers' degree and employees' degree) and management practices, they can manage better than US firms. It accounts all of the total difference (even more), and indicates that it is very important for the UK firms to make competition, managers' degree and employees' degree more helpful, if they want to reduce the gap. The first and third part are "Endowments" and "interaction" which measures the simultaneous effect of differences in endowments and coefficients. In our study, they both does not seem to matter much.

4.3. Detailed Decomposition

The respective contributions of competition, managers' degree and employees' degree factors to the "explained" part of the management gaps are show in **Table 4**.

As shown in **Table 4**, all estimated coefficients are statistically significant at the ten percent level or better, except total coefficient in model 3. The results are presented for three models that sequentially included each set of covariates:

Table 3. Threefold decomposition results.

	Management practices
US Firms	3.3526*** (0.4934)
UK Firms	3.1750*** (0.0776)
Difference	0.1776* (0.0920)
Decomposition	
Endowments	0.1269 (0.1214)
Coefficients	0.2156* (0.1118)
Interaction	-0.1648 (0.1388)

Note: *, **, *** represents significance at the 10%, 5%, and 1% level, respectively.

Table 4. Detailed decomposition results.

Variables	US-UK firms (Management = 0.1776 units)								
	Model1			Model2			Model3		
	Coef	S.E.	Perc	Coef	S.E.	Perc	Coef	S.E.	Perc
managers' degree	0.0409***	0.0146	14.80%	0.02674*	0.0143	15.06%	0.0289*	0.0129	16.27%
employees' degree				0.1411***	0.0466	79.45%	0.1176***	0.0430	66.22%
competition							-0.1434***	0.0388	-
Total	0.0409***	0.0146	14.80%	0.1678***	0.0455	94.51%	0.0031	0.0613	-

Note: *, **, *** represents significance at the 10%, 5%, and 1% level, respectively.

Model 1 was the base model with managers' degree; Model 2 added the employees' degree covariates to Model 1; and, Model 3 was the full model that added the competition factors to Model 2.

The results in **Table 4** show that the base model (Model 1) that included the managers' degree only explained roughly 14.80% of the management gaps between two groups. Once employees' degree variable was included, the contribution of the firm size is up to 15.06%. In particular, employees' degree explained approximately 79.45% (in model 2) of the management gap but explained substantially less (just 66.22% in Model 3). Two results stand out. On one hand, employees' degree has the most important impact on the management gap. Education, employees' degree, is a useful way to enhance the staffs' skills and ability, both for the individuals hired and current employees [84] [85]. British firms can adopt selectivity in staffing method to get skilled employees. At the same time, they can improve the quality of current employees' by providing comprehensive training and development activities after selection [53] [86] [87].

On the other hand, competition has negative impact (-0.1434***) on the gaps

explanation. In general, competition imposes on the organization a seemingly conflicting set of demand, and represents turbulence, stress, risk and uncertainty [26]. The United States, which generally has very competitive product markets by international standards, does not have as much of a tail of badly-managed firms as some other countries [16]. US companies have been urged to adopt a variety of performance-enhancing to improve their competitiveness in the global marketplace [6]. However, in this paper the mean of UK competition and US competition are 0.4201 and 0.2354, respectively. This means UK businesses need to face a more competitor environment than US. That is the reason why there exist negative impacts on the gaps explanation.

5. Summary and Conclusion

This study presents an analysis of determinations of management practices, and focuses on what makes the differences of management between US and UK. One of the main contributions of this study is the decomposition of the management discrimination. In addition, the analysis was conducted utilizing world management survey's data, which allows us to measure management discrimination. The management practices gap between US and UK is decomposed into three parts, which are competition, managers' degree and employees' degree. Managers' degree and employees' degree are positively correlated with management practice. In particular, employees' degree variables explained approximately 70% of the management gap. The impact of competition on management practices is inconclusive, partly because of the method's problems but mainly because of the data we used. Beyond that, comparative static and even dynamic studies of management practice are required. As an exploratory study in an area yet to be fully developed, this paper highlights determinates of management practices for international scholars, and leads the way for further theoretical and empirical studies in the field.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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