

Exploring the Effect of Culture on How Pay-For-Performance Affects Turnover: A Multi-Level Longitudinal Study on 24 Countries

Lian Shao, Cornell University (ls288@cornell.edu)

Michael C. Sturman, Cornell University (mcs5@cornell.edu)

ABSTRACT

While research has shown that pay-for-performance plans affect the curvilinear relationship between performance and turnover, all of this research has been conducted on samples of employees from the United States. In this paper, we explore the potential moderating effects of culture. Specifically, we predict that we will replicate (1) the curvilinear relationship between performance and turnover, and (2) the moderating effects of pay-for-performance; but also (3) that culture will affect the nature of these relationships. We test our hypotheses on a sample of 4072 employees from 24 countries, and analyze our data with non-linear HLM models.

Turnover research has long recognized that turnover can be functionally managed, so that top performers are retained and poor performers leave to be replaced by better performers (Boudreau & Berger, 1985; Dalton, Todo, & Krackhardt, 1982). Compensation systems have been seen as a potentially highly effective tool for managing functional turnover through its effects on voluntary turnover (Dreher, 1982; Gerhart & Milkovich, 1992; Griffeth, Hom, & Gaertner, 2000; Harrison, Virick, & William, 1996; Porter & Lawler, 1968; Schwab, 1991; Steers & Mowday, 1981; Trevor, Gerhart, & Boudreau, 1997). More specifically, pay-for-performance compensation systems can influence the relationship between performance and turnover (Trevor et al., 1997), with potentially high organizational payoffs (Sturman, Trevor, Boudreau, & Gerhart, 2000). However, to date, the studies investigating the pay-for-performance/turnover link has focused on US samples. Research involving different cultures has found different preferences regarding pay allocations (e.g., Berman, Murphy-Berman, & Singh, 1985; Bond, Leung, & Wan, 1982; Leung & Bond, 1982). The purpose of this study is to examine how culture may moderate the effect of pay-for-performance on turnover.

March and Simon (1958) suggested that voluntary turnover is a function of perceived desirability and ease of movement, which typically operationalized in terms of job satisfaction and number of perceived extraorganizational alternatives or actual labor market conditions. Specifically, on the desirability side of the model, job performance associates with satisfaction through moderating influences such as pay-for-performance. Higher performance ratings are a means to recognize good performers' contribution. As a result, their satisfaction towards the job may increase and desirability of movement may be reduced. At the same time, pay-for-performance distinguishes poor performers from good performers through remarkable pay differences. Such pay distinction may exert additional pressures on poor performers, who already burdened with the perceived threat of dismissal. While the strength of this effect likely varies across cultures, it is likely to be present in some form in at least some other cultural contexts (e.g., countries with at least some component of individualism). Combined the effects of the perceived desirability and ease of movement along with the moderating effects of pay-for-performance reward, we expect that we will observe a non-linear relationship between performance in turnover across cultural contexts. Thus, we predict the following:

H1: There exists a non-linear relationship between performance and turnover that generalizes across cultures.

We also expect that some aspects of pay-for-performance will likewise generalize across cultures. As reviewed above, higher pay-for-performance decreases the likelihood of high performers leaving in the United States. The magnitude of this effect likely varies across cultures, but may be best explained as a moderating effect. Thus, we predict H2: Pay-for-performance will moderate the non-linear relationship between performance and turnover.

While we expect some aspects of the relationships between performance, pay-for-performance, and turnover to generalize across cultures, we likewise expect differences to exist across cultures. In this paper, we will focus on four cultural dimensions developed by GLOBE (House et al., 2004), uncertainty avoidance, power distance, institutional collectivism, and performance-orientation, which are particularly relevant with the effectiveness of compensation plans and performance-based pay on turnover.

Uncertainty avoidance refers to the extent to which members of an organization or society strive to avoid uncertainty by relying on established social norms, rituals, and bureaucratic practices (House et al., 1999). From a reward perspective, rewards contingent upon performance are less predictable than non-performance-based pay plans. Therefore, employees from high uncertainty avoidance countries tend to appreciate a structured and more foreseeable pay system while employees from low uncertainty avoidance countries are more likely to accept the performance-based pay (Chiang, 2005). Power distance is defined as the degree to which a member of an organization or a society expects and agrees that power should be stratified and concentrated at higher levels of an organization (House et al., 1999). Pay-for-performance with its emphasis on performance reward rather than compensation for positions or seniority has the potential to narrow the reward gap between the superior and subordinates. Thus, pay-for-performance is more likely to be appreciated in a low power-distance culture. The institutional collectivism refers to the degree to which organizational and social institutional practices encourage and reward collective distribution of resources and collective action (House et al., 1999). Individualistic cultures focus on personal interests and achievements while collectivistic cultures are more concerned about group harmony. Accordingly, a performance-based reward, which is designed to recognize and reward distinguished performances, would be more effective in individualistic countries than in collectivistic cultures, where individuals tend to identify themselves with their group's performance and place greater emphasis on the group-based rewards (Schuler and Rogovsky, 1998; Easterby-Smith et al., 1995; Huo and von Glinow, 1995). Performance orientation is the degree to which an organization or society encourages and rewards group members for performance improvement and excellence (House et al., 1999). High performance-oriented societies value and reward individuals and groups who produce results and accomplish their assignments. At the same time, societies with lower performance orientation tend to regard motivations stemmed from financial reward as inappropriate and potentially destructive to organizational harmony (Chiang, 2005). Therefore, we predict that H3: Culture as an overall composite will exert certain level of impact on the effectiveness of performance-based pay.

The data was obtained from a large diversified service-oriented organization with employees spread over 35 countries. Data was collected from personnel records at the end of 2004. It included 4072 employees who had worked in 2003 (and thus had performance rating for that year), pay raise from 2003, employee's country, turnover, and turnover type (voluntary or involuntary). Information on the countries and the cultural dimensions of each (explained in more detail below) are provided in Table 1.

Employee performance rating. Employee performance is based on the annual performance assessment (year 2003) provided by the supervisors. The final evaluation was summarized with a single item, from 1 to 4. The lowest rating, 1, signified "below expectations," 2 was "met expectations," 3 was "exceeded expectations," and 4 represented employees who "significantly exceeded expectations."

Voluntary turnover. Employees who voluntarily left the job at the end of year 2004 were coded 1; those who stayed were coded 0. Employees who left the company involuntarily (e.g., due to poor performance, business divestiture, or location closure) were not included in the analyses.

Performance-based pay. The magnitude of pay growth from year 2003 to year 2004 was adopted as the measure of performance-based pay. This is the same approach used by Trevor et al. (1997), except that our measure of salary growth is for a one-year span, whereas Trevor et al (1997) looked at average salary growth over a three-year period.

Cultural dimensions. The scores (practice) on four cultural dimensions, uncertainty avoidance, power distance, collectivism I, and performance-orientation were based on the report provided by House et al (2004).

Analyses. Hierarchical Linear Model (HLM) statistical program was used to conduct the analysis. The first level of analysis (Level-1) represented the individual-level of analysis, and specifically modeled turnover. The second level of analysis (Level-2) represented the countries, and is where we model the effects of the cultural dimensions. Because we are modeling turnover, a dichotomous outcomes, we employed the non-linear features of HLM. Thus analyses were comparable to a logistic regression in that the dependent variable was the probability of turnover.

To test the various hypotheses, we tested two level-1 models. The first model looks simply for the existence of a non-linear relationship between performance and the probability of turnover. This is represented in equation [1].

$$\text{Prob}(\text{turnover}) = \beta_0 + \beta_1(\text{performance}) + \beta_2(\text{performance square})^2 + \epsilon \quad [1]$$

To avoid multicollinearity, performance was centered before it was squared. Additionally, we still employed a random effects model, with individuals nested within country. For all these betas at level-1, the level-2 model was modeled as the intercept plus an error term.

The second model is intended to investigate the modeling effect of performance-based pay on the performance/turnover relationship. This model therefore includes pay-increase, and the interactions of pay-increase with performance and performance-squared. Again, all variables are centered before being used in any interactions, and a random-effects approach is still used, with the level-2 model including an intercept and error term for each of the level-1 beta coefficients.

$$\text{Prob}(\text{turnover}) = \beta_0 + \beta_1(\text{performance}) + \beta_2(\text{performance})^2 + \beta_3(\text{pay increase}) + \beta_4(\text{pay increase}) * (\text{performance}) + \beta_5(\text{pay increase}) * (\text{performance})^2 + \varepsilon \quad [2]$$

After testing Equation [2] where the level-2 model involves only intercepts and error terms, we then modeled a more sophisticated level-2 analysis which included the cultural dimensions. Because we are interested in the potential moderating effects of culture on the effects associated with increased pay-for-performance, we thus tested only more sophisticated analysis of B₃, B₄, and B₅, as follows:

$$\beta_3 = \delta_0 + \delta_1 X_4(\text{culture}) + \gamma \quad [3a]$$

$$\beta_4 = \delta_0 + \delta_1 X_4(\text{culture}) + \gamma \quad [3b]$$

$$\beta_5 = \delta_0 + \delta_1 X_4(\text{culture}) + \gamma \quad [3c]$$

For simplicity, we represented the cultural dimensions above in the single term. However, each of the above three equations included uncertainty avoidance, power distance, collectivism I, and performance-orientation. Furthermore, all cultural variables were grand centered before being included.

Table 2 provides the means, standard deviation and correlations for the variables of the study. We can observe the negative simple linear relationship between performance and turnover ($r = -0.07$), which was consistent with the findings of several meta-analysis studies (Bycio, Hackett & Alvares, 1990; McEvoy & Cascio, 1987; Williams & Livingstone, 1994).

Table 3 reports the partial coefficients of performance as a quadratic term and as a zero-order term in a multiple regression model. We noticed a strong negative linear performance/turnover relationship ($\beta_1 = -0.63$, $p = 0.001$) and a positive association between the quadratic performance term and turnover ($\beta_2 = 0.19$, $p = 0.003$). The combination of these two outcomes exhibited a curvilinear relationship, which confirmed our first hypothesis: poor performer and good performers are more likely to leave the organizations than are average performers.

Table 4 shows how the performance/turnover relationship changes when the performance-based pay variable is included in the model. Comparing with the model only including performance and performance-squared as predictors of turnover behavior, the negative linear performance/turnover relationship significantly reduced (from $\beta_1 = -0.63$ to $\beta_1 = -0.14$) and a weak negative association substituted the positive linkage between performance-squared and turnover (from $\beta_2 = 0.19$ to $\beta_2 = -0.03$). Moreover, pay increase ($\beta_3 = -4.95$, $p = 0.018$), its interaction with performance ($\beta_4 = 10.78$, $p = 0.000$) and performance square ($\beta_5 = -9.09$, $p = 0.005$) all showed significant relationship with turnover, which were consistent with the results reported by Trevor and his colleagues (1997) as well as our second prediction that pay-for-performance will moderate the non-linear relationship between performance and turnover.

Table 4 shows how each cultural dimension moderate the effectiveness of performance-based pay. The results in Table 4 show that each cultural dimension— uncertainty-avoidance, power distance, collectivism, and performance-oriented –affect the nature of the relationships reported at Level-1 in the analyses. Clearly, our results show that culture dimensions, as predicted affect the usefulness of performance-based pay on turnover behaviors.

Overall, our findings in a global level were consistent with those of Trevor et al (1997): a non-linear relationship between performance and turnover and the significant moderating effect of pay-for-performance on turnover were identified based on personnel records of 4072 employees from 24 countries. Such results are also in agreement with the argument of equity theory and discrepancy theory that high performance will lead to increased expectations of rewards, which will lead to increased turnover if those expectations are not met. The results of our study also suggest that national culture might exert influences on effectiveness of pay-for-performance tools.

From a practical perspective, these findings suggest that the efficiency of a compensation system, such as pay-for-performance, may largely depend on the culture of a country in which a multinational company was operated. From a theoretical perspective, the results of this empirical study not only confirmed the curvilinear performance/turnover relationship across cultures but also verified significant moderating effect of pay-for-performance-based in a multinational setting. In addition to emphasizing the importance of the strong link between pay and performance, the extent to which such plans will be successful will depend on how well a country's culture supports such reward system.

References are available upon request

Table1. Country scores for four dimensions of national culture (practice)

Country	Uncertainty Avoidance	Power Distance	Collectivism	Performance Orientation
Australia	4.39	4.74	4.29	3.65
Brazil	3.60	5.33	3.83	4.04
Canada	4.58	4.82	4.38	4.49
China	4.94	5.04	4.77	4.45
Denmark	5.22	3.89	4.80	4.22
France	4.43	5.28	3.93	4.11
Germany	5.22	5.25	3.79	4.25
Hong Kong	4.32	4.96	4.13	4.80
Ireland	4.30	5.15	4.63	4.36
Italy	3.79	5.43	3.68	3.58
Malaysia	4.78	5.17	4.61	4.34
Mexico	4.18	5.22	4.06	4.10
Netherlands	4.70	4.11	4.46	4.32
Philippines	3.89	5.44	4.65	4.47
Portugal	3.91	5.44	3.92	3.60
Russia	2.88	5.52	4.50	3.39
Singapore	5.31	4.99	4.90	4.90
Spain	3.97	5.52	3.85	4.01
Sweden	5.53	4.85	5.22	3.72
Switzerland	5.37	4.90	4.06	4.94
Taiwan	4.34	5.18	4.59	4.56
UK	4.65	5.15	4.27	4.08
USA	4.15	4.88	4.20	4.49
Venezuela	3.44	5.40	3.96	3.32

Source: House et al (2004)

Table 2. Means, Standard Deviations, and Correlations

	Variable	M	SD	1	2	3	4	5	6	7
1	Performance	2.31	0.60	-						
2	Merit % increase	0.02	0.02	0.42	-					
3	Voluntary Turnover	0.15	0.36	-0.07	-0.07	-				
4	Uncertainty Avoidance	4.26	0.34	-0.03	0.03	-0.01	-			
5	Power Distance	4.95	0.21	-0.01	0.08	-0.06	-0.10	-		
6	Collectivism I	4.18	0.20	0.02	-0.02	0.02	0.24	-0.67	-	
7	Performance Orientation	4.36	0.29	-0.01	-0.11	0.09	0.08	-0.5	0.43	-

Notes: N at level-1=4072. N at level-2=24.

Table 3. Results of Hierarchical Linear Modeling Analysis-Model 1 at Level-1

Fixed Effects	Coefficient	Standard Error	t	p
Performance slope	-0.63	0.16	-4.05	0.001**
Performance-Squared slope	0.19	0.06	3.42	0.003**

Notes: **p<.01. N at level-1=4072.

Table 4. Results of Hierarchical Linear Modeling Analysis-Model 2 at Level 1

Fixed Effects	Coefficient	Standard Error	t	p
Performance slope	-0.14	0.11	-1.26	0.222
Performance-Squared slope	-0.04	0.07	-0.48	0.634
Pay Increase slope	-4.95	1.94	-2.56	0.018*
Performance*Pay Increase slope	10.78	1.88	5.75	0.000***
Performance-Squared*Pay Increase slope	-9.09	2.86	-3.18	0.005**

Notes: *p<.05; **p<.01; ***p<.001. N at level-1=4072.

Table 5. Results of Hierarchical Linear Modeling Analysis-Model 3 at Level 2

Fixed Effects	Coefficient	Standard Error	t	P
For Pay Increase slope, β_3				
Intercept	-7.72	2.82	-2.74	0.014**
Uncertainty Avoidance	-12.56	1.87	-6.73	0.000***
Power Distance	-14.92	10.38	-1.44	0.167
Collectivism I	-15.20	11.09	-1.37	0.187
Performance-oriented	0.48	3.80	0.13	0.901
For Performance*Pay Increase slope, β_4				
Intercept	4.84	2.94	1.65	0.115
Uncertainty Avoidance	11.37	4.00	2.84	0.011**
Power Distance	-41.03	7.08	-5.80	0.000***
Collectivism I	-31.40	7.69	-4.08	0.001**
Performance-oriented	-20.64	4.03	-5.13	0.000***
For Performance-Squared*Pay Increase slope, β_5				
Intercept	-7.61	6.16	-1.24	0.232
Uncertainty Avoidance	10.90	5.66	1.93	0.069
Power Distance	39.24	11.05	3.55	0.002**
Collectivism I	10.67	9.94	1.07	0.297
Performance-oriented	13.25	10.45	1.27	0.22

Notes: *p<.05; **p<.01; ***p<.001. N at level-1=4072. N at level-2=24.