

# 行政院國家科學委員會專題研究計畫 成果報告

高承諾人力資源管理對公司績效的影響：針對心理氣候、  
正向的工作態度與行為、流程創新績效以及顧客滿意中介  
因素的多層次與多階段分析  
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# 高承諾人力資源管理對公司績效的影響：針對心理氣候、正向的工作態度與行為、流程創新績效以及顧客滿意中介因素的多層次與多階段分析

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In recent years, there has been a cumulative body of research examining human resource management (HRM) and firm performance (e.g., Arthur, 1994; Bae & Lawler, 2000; Becker & Huselid, 1998; Delery & Doty, 1996; Delaney & Huselid, 1996; Huselid, 1995; Ichniowski, Shaw, & Prensushi, 1997; MacDuffie, 1995; Youndt et al., 1996). Among them, many studies found positive relationships between HRM systems and firm performance. Since these HRM systems contribute to firm performance through increasing employees' commitment and competencies, scholars called these systems as high-commitment HRM practices (Ulrich, 1998; Whitener, 2001).<sup>1</sup> Prior research focuses primarily on the direct linkage between high-commitment HRM practices and performance at the plant or firm level. However, how these HRM practices enhance firm performance is still less investigated by existing studies (Bowen & Ostroff, 2004). Becker and Gerhart (1996) further indicated that, without the analyses of mediating factors, researchers will have difficulties in explaining the relationships between HRM and firm performance. Thus, this deficiency requests future research to put more efforts on identifying these mediating factors. Careful examination of these mediating factors at the individual level will make meaningful contributions to this area. In this study, our primary interest is concerning the relationships between high-commitment HRM practices and psychological process variables. Only through this detailed analyses of these processes can we open the 'black box' of the HRM-performance linkage.

Some scholars (e.g., Arthur, 1994; Huselid, 1995; Wood & de Menezes, 1998) have argued that HRM practices may affect firm performance by shaping desirable employee attitudes (e.g., job satisfaction) and behaviors (e.g., organizational citizenship behaviors, OCBs). In other words, a firm can enhance its performance by increasing job satisfaction and OCBs. Despite this theoretical assertion, there is still a lack of research empirically examining the relationships between high-commitment HRM practices and employees' attitudes as well as behaviors from a multi-level perspective. By using this multi-level method, researchers can eliminate errors associated with the research design at the single level (Hofmann, 1997). The aim of this study has two folds: (1) to develop a model that

illuminates the relationships of high-commitment HRM practices, psychological climate perceptions, job satisfaction, and OCBs, and (2) to empirically investigate these relationships in the model using a multi-level approach.

## Hypotheses

*Hypothesis 1.* Psychological climate perceptions will be positively and significantly related to job satisfaction.

*Hypothesis 2.* Psychological climate perceptions will be positively and significantly related to OCBs.

*Hypothesis 3.* Job satisfaction will mediate the relationship between psychological climate perceptions and OCBs.

*Hypothesis 4.* High-commitment HRM practices will be positively and significantly related to psychological climate perceptions.

*Hypothesis 5.* High-commitment HRM practices will be positively and significantly related to job satisfaction after controlling for psychological climate perceptions.

*Hypothesis 6.* High-commitment HRM practices will be positively and significantly related to OCBs after controlling for psychological climate perceptions and job satisfaction.

*Hypothesis 7.* Adopting high-commitment HRM practices is positively related to organizational performance.

The individual level data allow for the assessment of Hypotheses 1, 2, and 3, which predict significant relationships among the three attitudes and behaviors: psychological climate perceptions, job satisfaction and OCBs. The correlations among these variables support the first two hypotheses, stating that psychological climate perceptions, job satisfaction and OCBs are highly correlated each other at the .05 level.

To test Hypotheses 1 and 2, we analyzed the individual-level data using hierarchical regression analysis. Table 2 summarizes the regression results. As we predicted, Hypothesis 1 states that *psychological climate* is positively

related to *job satisfaction* and was supported ( $t=7.86$ ,  $\beta=0.385$ ,  $p<.001$ ,  $R^2=.179$ ). In addition, Hypothesis 2 predicts a positive relationship between *psychological climate* and *OCB*. The result also indicates that *psychological climate* is a positive predictor of *OCB* ( $\beta=0.331$ ,  $p<.001$ ,  $R^2=.149$ ). Thus, Hypothesis 2 was supported.

Hypothesis 3 proposes that *job satisfaction* is a mediator of relationship between *psychological climate* and *OCB*. To test this hypothesis, we followed the procedure outlined in Baron and Kenny (1986) and found that the results provide support for a partially mediated model (Hypothesis 3) and are consistent with our prediction. From Table 2, we know *psychological climate* is a significant predictor of *OCB* ( $\beta=0.331$ ,  $F=33.38$ ,  $p<.001$ ), and *job satisfaction* is a significant predictor of *OCB* ( $\beta=0.240$ ,  $F=21.04$ ,  $p<.001$ ). In the presence of *job satisfaction*, however, the size and significance of *psychological climate* is significantly reduced (from  $\beta=0.331$  to  $0.279$ ,  $p<.05$ ), though its effects remain significant. In other words, the significant relationship between *psychological climate* and *OCB* declines substantially when *job satisfaction* is added to the equation. Thus, *job satisfaction* partially mediated the relationship between *psychological climate* and *OCB*.

To assess the viability of aggregating individual-level data to the plant level, we calculated intra-class correlations and inter-rater agreement indices to examine within-group agreement and between-group variation (Hofmann, 1997). We found that ICC(1) values range from 0.05 to 0.18 and ICC(2) values from 0.386 to 0.70, and the values of within-group agreement from 0.74–0.91. This indicates that aggregating the measures of psychological climate perceptions, job satisfaction, and OCBs to the plant level is appropriate.

**Test of HLM model.** For the investigation of the cross-level Hypotheses 4 to 6, we used the HLM approach to analyze the relationships among focal variables. In Hypothesis 4, we state that *high-commitment HRM*, a level two variable, will be positively related to *psychological climate*, a level one variable. However, before testing the hypotheses we need to explore the conditions associated with HLM. In order for this hypothesis to be supported, a significance between-plant variance in *psychological climate* needs to exist. Thus, we estimated a null model with no level two predictors except with *psychological climate*. Level one variable is the dependent variable. The result indicates there is significance between-plant difference in *psychological climate* ( $\sigma^2_{00}=.027$ ,  $p<.001$ ) and justifies further cross-level analyses. To test Hypotheses 5 and 6, we also ran two null models for the two hypotheses. Similarly, the null model

for *job satisfaction* indicates that there is systematic between-plant variance ( $\sigma^2_{00}=.096$ ,  $p<.05$ ). And as we expected, the result also expresses that *OCB* ( $\sigma^2_{00}=.096$ ,  $p<.05$ ) varies significantly by plants, satisfying the first condition of the HLM approach.

In addition, the intra-class correlation “ICC (1)” (Hofmann, 1997) represents that 5.4 % of the variance in psychological climate perceptions lies between plants; 14.6 % in job satisfaction, and 17.5% in OCBs. That means the individual-level variables could potentially be explained by *high-commitment HRM*, the level two predictor variable. Then we conducted cross-level analysis. Hypothesis 4 predicts a positive relationship between high-commitment HR practices and the individual psychological climate perceptions. The statistic result shows a non-significant, negative relationship ( $\beta_{01}=-.037$ ,  $p>.05$ ). Thus, Hypothesis 4 was not supported.

To test Hypothesis 5, we estimated a HLM equation in which psychological climate is the level one predictor and then regressed the intercept coefficients obtained from level one on *high-commitment HRM* at level two. As verified in Hypothesis 1, *psychological climate* ( $\beta=0.35$ ,  $p<.001$ ) has a significantly positive relationship with *job satisfaction*, consistent with our regression analysis result. When we added the plant-level predictor in the model, we found that *high-commitment HRM* ( $\beta=0.078$ ,  $p<.1$ ) demonstrated weak significant relationships with *job satisfaction* after we accounted for *psychological climate*. Hence, Hypothesis 5 was marginally supported.

The HLM model was also conducted to test Hypothesis 6, which predicts *high-commitment HRM* is positive related to *OCB* after controlling the individual-level predictors. As reported in Table 3, we found similar results with regression analysis for Hypothesis 2. However, *high-commitment HRM* does not have significant relationships with *OCB* ( $\beta=0.048$ ,  $p>.05$ ) after we account for *psychological climate* and *job satisfaction*. Thus, Hypothesis 6 was not supported.

At the firm-level study, our results showed that high-commitment HRM practices significantly and positively affected firm performance ( $\beta_{\text{innovative HRM practices} \rightarrow \text{organizational performance}}=0.29$ ,  $p<0.01$ ).

## Discussion and Conclusions

The purpose of this study is to explore the relationships among high-commitment HRM practices, psychological climate perceptions, job satisfaction, and OCBs as well as firm performance. The findings in the present study

can be summarized as follows: First, employee satisfaction is higher when employees develop strong psychological climate perceptions of organizational supports, recognition of their contributions, and an innovative work environment. In a competitive world, innovation has become one of the most important competencies for firms to compete successfully (Higgins, 1996; Ravichandran, 1999). Thus, an employer who encourages employees to innovate at work, and gives them support at work, may increase the employees' sense of freedom at work, which in turn enhances their job satisfaction. In addition, evidence shows that strong psychological climate perceptions lead to OCBs. This is because the supportive organizational climate perceptions encourage employees to be unselfish and altruistic, and employees are willing to provide the extra-role behaviors that are not immediately related to their jobs but are beneficial to their organizations. Previous research proposed such relationships but rarely explored them empirically. This study contributes to that literature by demonstrating the relationships.

Next, job satisfaction partially mediates the relationship between psychological climate perceptions and OCBs. The finding is consistent with the idea that psychological climate perceptions have a direct effect on OCBs as well as an indirect effect on OCBs via job satisfaction.

Lastly, greater use of high-commitment HRM practices is associated with higher job satisfaction. This finding enables HRM management to provide further explanation for the positive effects of employees' work attitudes. Prior research is not only lacking, but for those studies that have examined the effects of HR practices on employee work attitudes contain mostly employees who filled in all questionnaire items. They have not drawn any convincing inferences and conclusions of whether HRM practices can truly affect employee attitudes. This study adopted a cross-level analysis that adds more comprehensiveness and refinement to HRM and organizational behavior research.

The individual-level analyses demonstrate strong and clear relationships among psychological climate perceptions, job satisfaction, and OCBs. However, results from the cross-level analyses did not fully support the hypotheses in our analytic framework, but marginally consistent with our prediction. Specifically, only one of three predicted relationships is significant at the .10 level, that is, the relationship between high-commitment HRM practices and job satisfaction. Contrary to our expectation, high-commitment HRM practices do not have a significant relationship

with psychological climate perceptions. Moreover, the result shows a negative relation though statistically insignificant ( $\beta = -.037, p > .05$ ) and is not inconsistent with Ostroff and Bowen's (2000) framework suggesting that HRM practices are significantly associated with employees' perceptions and employee attitudes. Possible explanation may be that psychological climate perceptions encompass individual feelings of broad work environments in addition to HRM practices. Omission of such broad environmental factors may lead to incomplete treatment of organizational policies, procedures and structures. Future research needs to examine the broad aspects of organizational environments associated with psychological climate perceptions. Further, our data came from eleven manufacturing plants of eight firms. The small number of plant and firms in our data may not generate a sufficient variation of organizational characteristics that is critical to reflect the strength of HRM practices proposed by Bowen and Ostroff (2004).

There are several limitations in this study. First, due to the cross-sectional nature of our data, common method variance might inflate the estimates of the strength of the relationships among the individual-level variables. Though we used the confirmatory factor analysis to reduce this weakness, to more fully investigate these relationships, future studies need to employ a longitudinal design with multiple measurements of perceptions and attitudes. Second, although the number of data samples at individual level is sufficient, the sample number of plants in this study is too small, which may be one of the main reasons that cross-level analysis was unable to be strongly verified. Thus, future research should strengthen the sample collection at the firm level. The third limitation of this study concerns potential generalizability. Because we collected samples from the same industry, the generalization may be limited. Finally, the domain of high-commitment HRM practices includes a wide variety of management and HRM activities. The survey measures do not include all possible activities, policies, and procedures. Moreover, we cannot ensure whether the high-commitment HRM practices measures of this study fit the industrial characteristics that we conduct. It needs future researchers' cautious and discreet operations.

In conclusion, this study contributes to the area of HRM and OB. We bridge the macro and micro perspectives to test a multi-level model of the relationships of high-commitment HRM practices, psychological climate perceptions, job satisfaction, and OCBs. The continuing demands for the integration of cross-level relationships into organizational research, coupled with

various methodological developments, will shed a new light on a better understanding of complex phenomena in organizations.

The results also show the significant relationship between high-commitment HRM practices and firm performance.

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