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**A Behavioral Theory of Exploration and Exploitation in Human Resource Management:
Looking Inside the Fog**

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ABSTRACT

This study investigates when and why organizations explore or exploit the human resources in the organizations by combining Cyert and March's (1963) behavioral theory of the firm with strategic human resource management (HRM). While numerous studies on exploration and exploitation have been devoted to examining how balancing exploration and exploitation affects organizational performance and how organizations achieve an appropriate balance between the two, there are intriguing and unrevealed challenges in the literature. Scholars have used different conceptualizations of exploration and exploitation. Some regard exploration and exploitation as two distinct dimensions, while others consider exploration and exploitation two ends of a continuum. In addition, notwithstanding the importance of the human resources in organizations that contribute to sustained competitive advantage, the studies on the two have paid little attention to when and why organizations explore or exploit the human resources. In this vein, I attempt to reconcile these challenges by suggesting that organizations experiencing negative performance feedback engage in exploitation in HRM policies as a way of problemistic search. Further, it would be also interesting to shed new light on how the main relationship might be contingent upon employee turnover and internal conflict. I test my hypotheses using a large-scale workplace panel survey of Korean firms between 2005 and 2013, inclusively. My findings demonstrate that the relationship between negative performance feedback and exploitation in HRM policies depends on employees' turnover rate.

INTRODUCTION

Numerous scholars have argued that exploration and exploitation are fundamental activities of organizations. Exploratory activities include search for novel ideas and knowledge, development and experimentation of new technologies and methods, and actions for long-term survival advantages. On the other hand, exploitation activities involve refinement of established knowledge and technologies, application of existing competence to problems, and actions for short-term performance benefits. March (2006: 205) suggests that “exploitation without exploration leads to stagnation and failure to discover new, useful directions, whereas exploration without exploitation leads to a cascade of experiments without the development of competency in any of them or discrimination among them.” As noted by March’s (1991: 71) pioneering work, in this vein, “maintaining an appropriate balance between exploration and exploitation is a primary factor in system survival and prosperity.” In this vein, despite the growing literature on the importance of balancing exploration and exploitation, there are several fundamental challenges that deserve our concern.

First, exploration and exploitation are considered either two ends of a continuum (e.g., Levinthal & March, 1993; March, 1991) or two different and orthogonal features (e.g., Beckman, Haunschild, & Phillips, 2004; Benner & Tushman, 2003). For scholars treating the relationships between exploration and exploitation as competing aspects of organizational decisions and actions, it is difficult to predict that organizations can pursue both exploration and exploitation simultaneously. On the other hand, for scholars suggesting that two concepts are treated as complementary features of organizational behavior, the relationship between exploration and exploitation can be orthogonal, indicating that it is possible to achieve both exploration and exploitation simultaneously (Beckman, Haunschild, & Phillips, 2004). In this

vein, the previous studies based on different conceptualizations of exploration and exploitation have shown divergent consequences of balancing exploration and exploitation. Second, empirical analyses of the effects of balancing exploration and exploitation on organizational performance seem to be inconsistent with conceptual definitions of exploration and exploitation. While returns on exploitation are proximate and predictable, returns on exploration are distant and unpredictable. As such, it is not plausible to focus on one of two outcome metrics – long-term survival and short-term performance.

Third, little attention has been paid to exploration and exploitation in human resource management (HRM) policies although scholars in strategic management and HRM have long emphasized the importance of effectively managing the human resources in organizations. The resource-based view suggests that human capital resources that are valuable, rare, inimitable, and non-substitutable build the basis for a firm's sustained competitive advantage, leading to the firm's value creation (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984; Wright & McMahan, 1992). As such, it is momentous for organizations to explore and exploit the human resources in the organizations to achieve persistent success. However, little research explicitly focuses on exploration and exploitation in HRM policies.

Fourth, drawing on March's (1991) initial premise that balancing exploration and exploitation is essential to achieve persistent organizational success, some scholars have focused on the merits of the simultaneous pursuit of both exploration and exploitation (Benner & Tushman, 2003). However, March (1991) originally intended to provide an underlying mechanism of maintaining an appropriate balance between exploration and exploitation by incorporating heterogeneity in organizations' attributes into the simulation model. Therefore, studies on the choice or balance between exploration and exploitation need to be directed at examining the roles of internal variability (Kim & Rhee, 2009).

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In this paper, I suspect that the conflicting conceptualizations of exploration and exploitation may result in inconsistent predictions of how balancing exploration and exploitation relates to organizational performance. As such, my first object is to focus on organizations' decision behavior of exploration and exploitation in HRM policies, rather than attempting to present an integrative framework of balancing exploration and exploitation. Building on Cyert and March's (1963) behavioral theory of the firm, which posits problemistic search as a driver of organizational search and change, this study investigates and tests organizations' choice between exploration and exploitation in HRM policies. In theories of bounded rationality, organizations' decision behavior of the choice between exploration and exploitation is closely intertwined with the behavioral theory of organizational search (Cyert & March, 1963; March, 1991). Cyert and March (1963) suggest that an organization's search is stimulated if the organization's preferred alternative fails to satisfy its aspiration levels, i.e., problemistic search. On the other hand, an organization's search is inhibited if the organization's preferred alternative is above its aspiration levels. They also assume that organizational search is simple-minded in the sense that search occurs in the neighborhood of problemistic situations. Following Cyert and March's (1963) behavioral theory of the firm, this study investigates how problemistic search affects organizational choice between exploration and exploitation in HRM policies. It would be also intriguing to examine how the main relationship might be contingent upon employee turnover and internal conflict. To test my suggested hypotheses, I use a large-scale panel survey of Korean firms between 2005 and 2013, inclusively.

This paper proceeds as follows. First, I review the prior studies on exploration and exploitation, and the literature on performance feedback that suggests that negative performance feedback triggers problemistic search serving as a potential mechanism to

choose between exploration and exploitation. In doing so, I propose the line of reasoning that leads to my research hypotheses. Second, I examine how contingencies affect the relationship between negative performance feedback and exploration versus exploitation in HRM policies. Third, I introduce data and methodology to test my suggested hypotheses. Finally, I present my findings and discuss the implications of these results for theory and practice.

THEORY AND HYPOTHESES

Exploration and Exploitation

March's (1991) seminal paper provoked vigorous discussion on exploration and exploitation in organizational learning. March (1991: 85) suggested that "the essence of exploitation is the refinement and extension of existing competences, technologies, and paradigms. Its returns are positive, proximate, and predictable. The essence of exploration is experimentation with new alternatives. Its returns are uncertain, distant, and often negative." As suggested by Levinthal and March (1993: 105), "the basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, to devote enough energy to exploration to ensure its future viability." Accordingly, both exploration and exploitation are essential for organizational persistent success (e.g., March, 1991; Rivkin & Siggelkow, 2003). In keeping with the arguments about the importance of balancing exploration and exploitation, a number of studies have paid attention to the investigation of how organizations balance exploration and exploitation (e.g., Andriopoulos & Lewis, 2009), what challenges interfere with achieving the balance between the two, and how balancing the two affects organizational performance (e.g. He & Wong, 2004; Jansen, Van den Bosch, & Volberda, 2006; Katila & Ahuja, 2002; Uotila, Maula, Keil, & Zahra, 2009). For example, He

and Wong (2004) found that the effect of the interaction between explorative and exploitative innovation strategies in the context of technological innovation on firm performance is significantly positive, indicating that balancing exploration and exploitation leads to positive firm performance. However, Ebben and Johnson (2005) suggested that small firms pursuing efficiency and flexibility strategies underperform small firms following either an efficiency strategy or a flexibility strategy, meaning that the ambidexterity hypothesis is not supported. The burgeoning studies on balancing exploration and exploitation have several challenges that need to be resolved.

First, scholars studying exploration and exploitation have used different conceptualizations of the two. March's (1991) central premise of exploration and exploitation is that the two are fundamentally incompatible. There are several arguments that the author is in favor of an approach to two ends of a continuum from exploration and exploitation. As suggested by March (1991: 71), "both exploration and exploitation are essential for organizations, but they compete for scarce resources." By the definition, as more resources allot to explorative activities, inevitably fewer resources apportion to exploitative activities (Gupta, Smith, & Shalley, 2006; Lavie, Stettner, & Tushman, 2010). In addition, exploratory and exploitative activities are path-dependent, meaning that exploration that often results in less certain, more remote, and negative returns tends to promote more exploratory activities, while exploitation that often generates predictable, proximate, and positive returns tends to reinforce exploitative activities. In sum, since exploration and exploitation not only compete for scarce resources and attention, but also reinforce a path-dependent trajectory, exploration and exploitation are perceived as two ends of a continuum. However, other scholars suggested that exploration and exploitation can be orthogonal, indicating that it is possible to

pursue both exploration and exploitation simultaneously (Beckman, Haunschild, & Phillips, 2004; Beckman, 2006; Katila & Ahuja, 2002; Rothaermel, 2001; Rothaermel & Deeds, 2004). For example, Beckman, Haunschild, and Phillips (2004) examined how, when, and why organizational network is transformed. In the empirical study, they (2004: 259) suggested that organizations tend to reinforce their network structures by forming additional relationships with existing partners as a form of exploitation and broaden their networks by forming new relationships with new partners as a form of exploration depending on uncertainty that organizations face. Rothaermel (2001) and Rothaermel and Deeds (2004) studying inter-organizational alliances proposed that organizations utilize R&D alliances as a way of developing new ledge and product alliances as a way of exploiting existing knowledge. That is, the scholars view exploration and exploitation as distinct dimensions so that organizations can pursue exploration and exploitation at the same time. These inconsistent conceptualizations of exploration and exploitation give rise to divergent results of balancing exploration and exploitation. Second, the previous studies on how balancing exploration and exploitation affects organizational performance somewhat appear to use inconsistent measures with March's (1991) initial conceptualizations of the two. Exploration's returns are distant and uncertain, while exploitation's returns are proximate and expectable. In spite of such conceptualizations of the two, empirical analyses have paid attention to one of two outcome metrics – short-term and long-term performance.

Third, although the extant studies on exploration and exploitation have been conducted in a variety of contexts including inter-organizational alliance formation (Lavie, Kang, & Rosenkopf, 2011; Lavie & Rosenkopf, 2006; Rothaermel, 2001), strategic leadership (Jansen, Vera, & Crossan, 2009), multimarket competition (Anand, Mesquita, &

Vassolo, 2009), research and development (Hoang & Rothaermel, 2010), product development and innovation (Greve, 2007; Holmqvist, 2004; Voss & Voss, 2013), structure of communication networks (Lazer & Friedman, 2007), and structural design (Fang, Lee, & Schilling, 2010), the previous literature has paid little attention to exploration and exploitation in HRM policies. Given that numerous scholars have emphasized the importance of effectively managing the human resources in organizations because human resources that are valuable, rare, inimitable, and non-substitutable contribute to the sustainable competitive advantage, resulting in persistent organizational success (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984; Wright & McMahan, 1992), surprisingly, little research explicitly addresses exploration and exploitation in HRM policies.

Fourth, the apparent divergent consequences of balancing exploration and exploitation can be traced to relatively less emphasis on organizational attributes associated with internal varieties (Kim & Rhee, 2009). Since March's (1991) initial premise is that maintaining an appropriate balance between exploration and exploitation is fundamental for organizations to achieve sustained success, the author suggested underlying mechanisms of achieving balance between the two by incorporating organizational variability into the simulation model. In this vein, Kim and Rhee (2009) argued that research on the choice or balance between exploration and exploitation needs to be directed toward finding organizational processes related to exploration and exploitation.

To address these issues stated earlier, I first argue that scholars studying exploration and exploitation need to go back to March's (1991) original premise. This is because exploration and exploitation are not independent and distinct activities of organizations. After an organization initiates new experiments outside the existing knowledge base, it replicates

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the experiments and the application of newly acquired knowledge, thereby leading to exploitative activities (Lavie, Stettner, & Tushman, 2010). This implies that exploration and exploitation are closely intertwined so that exploration is not distinguishable from exploitation. In addition, since organizations are generally under resource constraints, they should allot attention and resources to exploratory and exploitative activities depending on the organizations' priorities (March, 1991). Taken together, I contend that exploration and exploitation should be deemed two ends of a continuum, rather than two distinct dimensions.

Building on the conceptualization of exploration and exploitation, this study focuses on organizational choice between exploration and exploitation in HRM policies to which the prior studies have been paid little attention. Understanding exploration and exploitation in HRM policies is essential given that exploration and exploitation exhibit numerous fundamental differences in strategic planning and implementation that result in different organizational performance. Moreover, it would be interesting to examine on how the main relationship might be contingent upon employee turnover and organizational conflict between the management and employee.

Performance Feedback and Problemistic Search

In theories of bounded rationality, humans have limited abilities to recognize all the alternatives and to calculate preferences for the entire options so that it is not possible to maximize their utilities. This means that boundedly rational actors pursue suboptimal levels of the alternatives, rather than utility maximization. Relying on bounded rationality reasoning, Cyert and March's (1963) behavioral theory of the firm suggests that organizations determine

organizational goals and set an aspiration level for each goal. When an organization fails to achieve its aspiration levels, it recognizes the situation as a problem. Accordingly, the organization initiates search activities for discovering an alternative that satisfies the acceptable-level goals, referred to as problemistic search. On the other hand, problemistic search is depressed by an alternative solution.

Problemistic Search and Exploration versus Exploitation in HRM Policies

Human resources as a source of generating sustainable competitive advantage have been widely addressed in strategic management and human resource management (HRM). Scholars have investigated how organizations achieve organizational goals through human resources in organizations and how HRM affects organizational performance. A growing number of studies on strategic HRM have shown that HR practices intended to improve employees' knowledge, skills, capabilities, and motivation contribute to positive performance (Huselid, 1995). Notwithstanding much evidence for the positive relationships between HR practices and various organizational outcomes, an important issue still remains regarding when and why organizations explore or exploit the human resources in the organizations.

Theoretical and empirical research on exploration and exploitation in HRM policies is required to understand organizations' decision behavior on HRM policies. This study attempts to bridge the gap in the prior studies on exploration and exploitation and strategic HRM. In this paper, exploration in HRM policies implies that an organization trains and develops employees' abilities from a long-term perspective. On the other hand, exploitation in HRM policies indicates that an organization ameliorates employees' performance from a

short-term perspective.

To investigate an underlying mechanism of the choice between exploration and exploitation in HRM practices, this study rests on organizational search. This is because organizations' decision behavior on exploration and exploitation is closely related to organizational search which has been conceptualized as a process associated with allocating attention and resources between explorative and exploitative activities (Cyert & March, 1963; March, 1991). Based on Cyert and March's (1963) behavioral theory of the firm, an organization's problemistic search is stimulated when the organization's performance falls below aspiration levels. The organization initiates problemistic search in the neighborhood where the problem is founded and seeks for a new solution in the vicinity of the problem and the current alternative. Cyert and March (1963: 169-170) suggested that "search is based initially on two simple rules: search in the neighborhood of the problem symptom and search in the neighborhood of the current alternative."

Taken together, when an organization's performance decreases below aspiration levels, the organization begins to recognize the situation as a problematic condition, triggering organizational search in HRM policies. Specifically, since organizational search occurs in the proximity of the current problem and alternative, organizations experiencing negative performance feedback tend to find a solution through exploitative activities including the improvement and extension of existing competences and technologies instead of exploratory activities including experiment with new ideas and alternatives. In alignment with my argument, numerous studies provide considerable empirical evidence of local search in various contexts (Baum & Dahlin, 2007). In sum, an organization facing failure to achieve organizational goals initiates problemistic search in HRM policies. Particularly, the

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organization's search is likely to incline towards short-term and local remedies such as improvement in employees' short-term performance and achievement, rather than to pursue long-term training and development of employees' capabilities, because returns on exploitative activities in HRM policies are more likely to be positive, proximate, and expectable than returns on exploratory activities in HRM policies. Therefore, I propose the following hypothesis:

Hypothesis 1: As an organization's performance falls below aspiration levels, the organization's exploitation in HRM policies increases.

The Moderating Effect of Employee Turnover Rate

An organization's turnover rate reflects the extent to which employees leave the organization during a certain period of time. High turnover rate in an organization can bring about organizational turbulence. Cameron, Kim, and Whetten (1987: 225) argued that "turbulence exists when changes faced by an organization are nontrivial, rapid, and discontinuous." Organizational turbulence generally causes unexpected consequences, i.e., uncertainty, implying that organizational uncertainty is considered a ramification of organization turbulence (Duncan, 1973).

Uncertainty organizations face not only deters them from implementing planned organizational activities, but also has dysfunctional impacts on organizational performance. As such, organizations facing high employee turnover may attempt to manage organizational uncertainty, intensifying the effect of both negative performance feedback and organizational search. Accordingly, employee turnover of an organization may moderate the impact of

negative performance feedback on exploration and exploitation in HRM policies.

I contend that high employee turnover an organization experiences can amplify organizational search associated with exploitation in HRM policies. An organization facing high employee turnover may be exposed to the disclosure of core competence and to the risk of knowledge leakage to competitors as employees move to competing organizations, resulting in detrimental effects of employee turnover on organizational performance (Hancock, Allen, Bosco, McDaniel, & Pierce, 2011). As such, if employee turnover brings about organizational uncertainty, organizations experiencing failure to achieve organizational goals are much more likely to notice problematic situations, thereby intensifying problematic search associated with exploitation in HRM policies. This may be because employee turnover increases the risk of knowledge and technology leakage to rival organizations, resulting in tangible and intangible costs accrued from opportunistic behaviors. As such, organizations are more likely to engage in exploitative activities in HRM policies to reduce the risk and costs, rather than exploratory activities in HRM policies. Consequently, I propose the following hypothesis:

Hypothesis 2: As an organization's employee turnover rate increases, hypothesis 1 becomes stronger.

The Moderating Effect of Organizational Conflict

Conflict between the management and employees in an organization is omnipresent.

Although there are various reasons for conflict between the management and employees, a substantial cause is due to competition for scarce resource. Pondy (1967: 297) suggested that

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“this conflict model, referred to as bargaining model, is proper for the analysis of labor-management relations and budgeting processes.” Notwithstanding few scholars who argue that conflict with an out-group may be beneficial to cohesiveness within the in-group, most researchers and managers believe that organizational conflict is deleterious to individuals as well as organizations. Organization conflict hampers smooth and expeditious communication and decision making among interest groups, obviously resulting in emotional and physical collision among interest groups in an organization. As a result, organizational conflict incurs substantial tangible and intangible costs so that organizations generally attempt to avoid or resolve internal conflict.

In this respect, I contend that the increased internal conflict between the management and employees in an organization can induce the organization to get more involved in problemistic search associated with exploitation in HRM policies. Specifically, organizations whose performance decreases below aspirations may behave rigidly in internal conflict between the management and employees because they may perceive the situation as a threatening incident. Staw, Sandelands, and Dutton (1981) argued that organizations facing a threatening event simplify information processing, narrow down the range of organization attention, and restrict exploration of new alternatives. They also contended that organizations experiencing a threatening situation make their control systems more concentrated and tightened.

Taken together, if organizations facing failure to satisfy organizational goals experience organizational conflict between the management and employees, they may recognize the situation as a severely threatening state so that they may lessen organizational flexibility to control deviant responses (Janis, 1972), narrow down the field of organizational

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attention, and inhibit exploratory search activities, amplifying the effect of negative performance feedback. Hence, the extent to which an organization experiences organizational conflict may moderate the impact of negative performance feedback on exploitative orientation in HRM policies. I therefore hypothesize:

Hypothesis 3: As an organization's internal conflict increases, hypothesis 1 becomes stronger.

METHODS

Sample and Data Collection

Data for this study were drawn from the Workplace Panel Survey (WPS) conducted by the Korea Labor Institute (KLI), a government-funded research institute for labor relations and labor policy, from 2005 to 2013 every other year. The objective of the WPS conducted on a nationally representative sample of workplaces in Korea was to inspect the real conditions of Korean workplaces' HRM and employment relationships in the workplace and furthermore to provide the practical implications for HRM and employment policies. The KLI has been conducting the WPS every two years since 2005. The 2005 WPS included 3,916 workplaces with thirty or more than employees in all industries except for agriculture, forestry, and fishery in the private sector and 359 state enterprises in the public sector. The sampled 3,916 workplaces were obtained from a stratified sampling method depending on industry, size, and region.

The survey data consisted of questions about workplace demographics, organizational finances, and HR programs and policies, industrial relations policies, and labor

union policies. Questionnaires including letters that explained the objectives and methods of the survey and its implications were sent to HR managers, industrial relations managers, and employee representatives in the sampled workplaces. KLI utilized a variety of methods to increase the response rate of WPS, yielding the response rate of approximate 50%. The 2005 WPS data included a total of 1,749 valid responses achieved at the end of the survey. Based on 1,749 valid workplaces, subsequent surveys have been conducting every other year. Of the valid workplaces, 1,415 in the 2007 WPS, 1,229 in the 2009 WPS, 1,091 in the 2011 WPS, and 960 in the 2013 WPS were retained, yielding that retention rates of panel surveys were 80.9%, 70.3%, 62.3%, and 54.9%, respectively. Of 960 workplaces with five consecutive periods, I only included workplaces with fiscal year from Jan. 1 to Dec. 31 because it is difficult to compare organizational performance among workplaces with different fiscal year ends. After handling missing variables, the final sample included 836 workplaces.

Dependent Variable

The dependent variable is exploration and exploitation in HRM policies. WPS developed a five-point Likert scale item to measure how organizations distribute attention and resources between exploratory and exploitative activities in HRM policies. The item was designed to capture how important it is for a workplace to train and develop employees' capabilities from a long-term perspective or improve employees' performance and achievement from a short-term perspective. The response scale for the item was a five-point Likert scale: 1 indicated "HRM policies are strongly operationalized to improve employees' short-term performance and achievement" and 5 indicated "HRM policies are strongly operationalized to develop employees' long-term capability". March (1991: 85) pointed out that "the essence of exploitation is the refinement and extension of existing competences, technologies, and

paradigms. Its returns are positive, proximate, and predictable. The essence of exploration is experimentation with new alternatives. Its returns are uncertain, distant, and often negative.” I consider that the item captures the kernel of exploration and exploitation based on March’s (1991) arguments. First, the item regards exploration and exploitation in HRM policies as two ends of a continuum, rather than as two distinct dimensions. Second, the item captures the essence of exploration by describing exploration in HRM policies as the development of employees’ capabilities, while it contains the essence of exploitation by delineating exploitation in HRM policies as the improvement in employees’ performance. Third, the item reflects short-term and long-term perspectives of exploitation and exploration in HRM policies. Collectively, I believe that the item is pertinent to capturing organizations’ exploration and exploitation in HRM policies.

Independent Variable: Performance below Aspirations

Following Cyert and March (1963), I define performance feedback as performance relative to social aspiration levels. Performance feedback was measured as the difference between a workplace’s performance and its competitors’ average performance. A measure of performance feedback was obtained from WPS. Performance was measured through labor productivity because labor productivity is theoretically and empirically appealing to scholars and business practitioners. HR managers were asked to rate performance feedback based on labor productivity at time $t-1$ ¹. The response scale for the item was a five-point Likert scale, with responses ranging from (1) “the workplace’s labor productivity is far below social

¹ The WPS survey was conducted at the end of the survey year. As such, survey items were measured at time t , unless otherwise stated. On the other hand, when respondents were asked to rate questions at the end of last year, the survey items were measured at time $t-1$.

aspirations” to (2) “below social aspirations” to (3) “similar to social aspirations” to (4) “above social aspirations” to (5) “far above social aspirations.” The responses were converted to -2, -1, 0, 1, and 2, respectively.

To isolate different effects of performance below and above aspiration levels on exploration and exploitation in HRM policies, I employed a linear spline function for performance relative to aspirations, with a knot at zero (Greene, 2012; Greve, 2003). I constructed two separate variables: *Performance below aspirations* $_{i,t-1} = performance_{i,t-1} - social\ aspirations_{i,t-1}$ if *performance feedback* $_{i,t-1} < 0$ and zero otherwise and *Performance above aspiration* $_{i,t-1} = performance_{i,t-1} - social\ aspirations_{i,t-1}$ if *performance feedback* $_{i,t-1} > 0$ and zero otherwise. Here, *i* indicates workplace, and *t* is time. The mathematical formula means that when a workplace’s labor productivity decreases below aspiration levels, the value of performance below aspiration levels (PBA) shows a negative sign; on the other hand, when a workplace’s labor productivity increases above aspiration levels, the value of performance above aspiration levels (PAA) shows a positive sign. Consequently, to support H1, the estimated coefficient of PBA should be positive and statistically significant, when PBA was regressed on exploration and exploitation in HRM policies.

Moderating Variables: Employee Turnover Rate and Organizational Conflict

In this study, I investigate two potential moderating variables – employee turnover rate and organizational conflict – in exploration and exploitation in HRM policies. First, employee turnover rate was measured as the ratio of the number of employees in a workplace who leave to the number of regular employees at time *t-1*. Second, organizational conflict was measured as the absolute value of the discrepancy between the average rate of wage increase proposed by the management at time *t-1* and the average rate of wage increase proposed by the labor

union at time $t-1$. This is because different perspectives on wage negotiation generate conflicts in organizations. Industrial relations managers were asked to rate the extent to which the average rate of wage increase is suggested by the management and the labor union, respectively.

Control Variables

To rule out alternative explanations for my findings, several important factors that may affect exploration and exploitation in HRM policies were included in my models. I controlled for workplace size and age as they have been found to affect organizational inertia (Hannan & Freeman, 1984). Prior studies have shown that organizations tend to exhibit the existence of inertia due to aging that hinders exploratory search activities (Balasubramanian & Lee, 2008; Hannan & Freeman, 1984). I operationalized workplace size as the number of employees reported by HR managers. Since workplace size is highly skewed, I took the logarithm of this figure. Workplace age was measured by subtracting the year of the workplace's foundation from the years of surveys. I also controlled for a multiple workplace dummy because a firm's attention on resource allocation in search activities could be affected by whether the firm has a single workplace or multiple workplaces. Since not all of the workplaces in my sample were a single workplace, I generated a dichotomous variable that took the value 1 if a workplace was one of multiple workplaces and 0 otherwise. I further included slack resources to control alternative explanations because Cyert and March (1963) argued that organizational search is not only triggered by a problem, but also facilitated by slack resources that enable organizations to pursue innovative search activities and new experiments. Two measures of slack resources used in previous research were adopted in my models. Absorbed slack was measured as the ratio of selling, general, and administrative

expenses to sales. Potential slack was measured as the ratio of debt to equity (Bromiley, 1991; Greve, 2003; Mishina, Dykes, Block, & Pollock, 2010). All control variables were also lagged by one year².

Model Specification

I tested the hypothesized effects using fixed-effects regression models for panel data to take into account time-invariant variables that have not been measured in the models because the Hausman (1978) specification test comparing the fixed-effects model with the random-effects model indicated that the appropriate procedure in the models is the fixed-effects estimation. I used a STATA command, ‘xtreg, fe’ for the statistical analyses.

RESULTS

Table 1 exhibits descriptive statistics and pairwise correlation coefficients for each of the variables used in my models. As the correlation table shows, the correlations do not seem to yield a serious issue in the analyses. To make it sure that multicollinearity is not a critical problem, I calculated variance inflation factors are widely employed to detect multicollinearity. In the main model, the highest variance inflation factor is 1.23, much below the level of concern of 10, implying that multicollinearity does not seem be serious in the analyses (Chatterjee & Hadi, 2006).

Table 2 presents the results of my analyses predicting exploration versus exploitation

² The WPS survey was conducted at the end of the survey year. As such, survey items were measured at time t , unless otherwise stated. On the other hand, when respondents were asked to rate questions at the end of last year, the survey items were measured at time $t-1$.

in HRM policies. Model 1 contains only the control variables. In model 1, PAA is positively significant, indicating that as a workplace's performance increases above aspirations, exploratory activities in HRM increases. In Model 2, I added the independent variable, PBA, and the control variables to test the effect of negative performance feedback on exploration and exploitation in HRM policies. The coefficient estimate for PBA is positive and statistically significant, in support for Hypothesis 1. That is, as a workplace's performance falls below aspiration levels, the workplace increases exploitation in HRM policies. This is because first, problemistic search occurs in the vicinity of the current problem and alternative and second, returns on exploitative activities in HRM policies tend to be more positive, proximate, and predictable than returns on exploratory activities in HRM policies. In model 3, I included the interaction term of PBA and employee turnover rate. The coefficient for the interaction term is positive and significant and thus supports the prediction for Hypothesis 2 that the relationship between PBA and exploitation in HRM policies becomes stronger as employee turnover rate increases. The result demonstrates that since employee turnover increases the hazard of knowledge and technology leakage to rival competitors, organizations facing negative performance feedback more intensify exploitation in HRM policies to lessen the risk and costs. In model 4, I entered the interaction term of PBA and organizational conflict. The estimated coefficient for the interaction term is positive but insignificant, indicating that Hypothesis 3 is not supported.

Taken together, these results suggest that performance that underperforms aspiration levels increases exploitation in HRM policies. Particularly, employee turnover seems to moderate the relationship between negative performance feedback and exploitation in HRM policies. The effect of performance below aspirations on exploitation in HRM is strengthened,

as employee turnover rate increases. However, unexpectedly, organization conflict does not seem to moderate the main relationship.

CONCLUSION

Since March's (1991) pioneering work on exploration and exploitation triggered the attention of numerous scholars, the researchers have primarily focused on how organizations achieve an appropriate balance between exploration and exploitation and how balancing exploration and exploitation affects organizational performance. However, the previous studies on balancing exploration and exploitation need to be reconsidered in light of several fundamental challenges. First, the existing literature has yielded divergent consequences due to different conceptualizations of exploration and exploitation such as two ends of a continuum and two distinct features. Second, empirical analyses appear to be inconsistent with conceptual definitions of exploration and exploitation. Third, although a number of researchers have examined exploration and exploitation in a variety of contexts, little attention has been focused on exploration and exploitation in HRM policies. Fourth, the studies on exploration and exploitation should be directed toward emphasis on organizational features related to internal variability.

In this paper, I attempt to deal with the fundamental challenges through the theoretical contributions and empirical analyses. Specifically, my research question lies in when and why organizations explore or exploit the human resources in the organizations. To understand an underlying mechanism of the organizational choice between exploration and exploitation in HRM policies, this study introduces Cyert and March's (1963) behavioral

theory of the firm into exploration and exploitation in HRM policies. Building on the behavioral theory of the firm, this study suggests that as an organization's performance relative to social aspiration levels decreases, the organization's exploitation in HRM policies increases. This paper also investigates the extent to which an organization faces employee turnover rate and organizational conflict moderates the effect of negative performance feedback on exploitation in HRM policies. The empirical results show that as labor productivity relative to social aspiration levels falls, exploitation in HRM policies increases. In addition, as employee turnover rate increases, the relationship between negative performance feedback and exploitation in HRM policies becomes stronger. However, the suggested hypothesis that organizational conflict moderates the main relationship is not supported. These findings provide numerous theoretical, empirical, and practical contributions and implications.

Before I mention theoretical, empirical, and practical contributions and implications, it is worth notifying the limitation of this study. My analyses using the WPS have potential issues associated with common method biases that can potentially mislead conclusions. Although common method biases can occur from a variety of potential sources, the most common and fundamental cause is derived from a common source or rater (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, I believe that my analyses using the WPS somewhat circumvent common method biases arisen from a common source or rater because the survey questions were sent to HR managers responding to workplace demographics, organizational finances, and HR programs and policies, industrial relations managers answering to industrial relations policies, and employee representatives replying to labor union policies. Moreover, although my analyses utilized one method of data collection, the

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survey questions such as workplace demographics and organizational finances are based on objective information available in the archival database. All things considered, common method biases may not be serious in this study.

Notwithstanding the limitation of this study, this paper theoretically and empirically contributes to the literature on exploration and exploitation, performance feedback, and strategic HRM. First, this paper bridges the gaps in the previous studies on exploration and exploitation by theoretically attempting to combine the behavioral theory of the firm with strategic HRM. Notwithstanding the importance of understanding of when and why organizations explore or exploit the human resources in the organizations, the literature on exploration and exploitation and strategic HRM has paid little attention to the fundamental research questions. In this vein, this paper presents and tests an underlying mechanism of organizational choice between exploration and exploitation in HRM policies by combining the behavioral theory of the firm and strategic HRM.

Second, my study empirically contributes to the literature on exploration and exploitation. After March's (1991) initial model of exploration and exploitation, a number of scholars have examined how organizations attain a suitable balance between exploration and exploitation and how balancing exploration and exploitation affects organizational performance. However, despite the growing literature on exploration and exploitation, there have been only a few empirical studies. This paper theoretically adopts exploration and exploitation as two ends of a continuum and empirically tests my suggested hypotheses by using a survey question asking exploration and exploitation in HRM policies in a continuum. Therefore, my research fills the gap in the prior studies on exploration and exploitation empirically.

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Third, this study theoretically and empirically extends March's (1991) pioneering research on exploration and exploitation by articulating internal variability. March (1991) shed new light on heterogeneity in an organization to maintain a proper balance between exploration and exploitation. Kim and Rhee (2009) also emphasized that the studies on choice or balance between exploration and exploitation need to take into account internal variability to reconcile the conflicting relationship. In this respect, my research considering employee turnover and organizational conflict not only extends March's (1991) original model, but presents potential possibilities that encourage researchers to explore internal and external dynamics.

Fourth, although scholars studying performance feedback based on the behavioral theory of the firm have accumulated many consequences in a variety of contexts such as risk taking (Bromiley, 1991; Singh, 1986), research and development intensity (Chen & Miller, 2007; Greve, 2003), search scope (Baum & Dahlin, 2007), new product introduction (Audia & Brion, 2007; Gaba & Joseph, 2013) strategic positioning (Park, 2007), and corporate illegality (Mishina, Dykes, Block, & Pollock, 2010), the literature on performance feedback has paid little attention to exploration and exploitation in HRM policies. However, my study bridges the gap by extending the behavioral theory of the firm into HRM. That is, my study not only introduces a new and important variable to the literature on performance feedback on the basis of the behavioral theory of the firm, but also extends the behavioral theory of the firm into HRM.

This study also provides several practical implications for executives and managers. First, my results show that as organizational performance falls below aspiration levels, organizations engage in exploitation in HRM policies. This means that problemistic search

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occurs in the vicinity of the current problem and alternative. In other words, when organizations experience negative performance feedback, they initiate problemistic search to resolve or escape a problematic situation but tend to seek for a myopic solution from a short-term perspective. A fundamental understanding of organizational behavior in response to performance feedback is momentous given that balancing exploration and exploitation is indispensable to achieve sustainable success. As such, for executives and managers, they should pay special heed to being captivated by a myopic decision making process as organizational performance decreases below aspiration levels. Meanwhile, HRM policies toward exploitation of the human resources may cause dysfunctional consequences – employees' dissatisfaction and low organizational commitment, because exploitation of the human resources focuses on improvement of short-term performance, rather than training and development for employees' capability from a long-term perspective. Accordingly, organizations experiencing negative performance feedback are essential to put deliberate effort into planning and implementing long-term strategies and policies and building organizational structure and culture.

Second, although organizational conflict as a variable for internal variability does not seem to affect the relationship between negative performance feedback and exploitation in HRM policies, employee turnover as another internal variety moderates the main link. As such, managing employee turnover rate is necessary for executives and managers to avoid being absorbed in planning and implementing strategies and policies from a short-term perspective.

In conclusion, although my research has many limitations, this study lays a cornerstone of further research on exploration and exploitation, performance feedback, and

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strategic HRM by combining the behavioral theory of the firm and strategic HRM.

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Table 1. Descriptive Statistics and Correlation Coefficients

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Exploration-Exploitation	3.58	.85	1.00									
2. PBA	-.09	.30	0.11**	1.00								
3. PAA	.30	.50	0.11**	0.18**	1.00							
4. Employee turnover rate	.14	.12	-0.08**	-0.00	-0.05**	1.00						
5. Organizational conflict	.03	.03	-0.00	-0.07**	0.00	-0.05*	1.00					
6. Workplace size	5.24	1.25	0.07**	-0.01	0.05**	-0.16**	0.06**	1.00				
7. Absorbed slack	.26	1.11	-0.01	-0.00	0.01	0.00	-0.03	-0.00	1.00			
8. Potential slack	1.63	30.53	-0.00	-0.00	0.01	0.01	-0.01	0.00	0.00	1.00		
9. Workplace age	22.97	15.99	-0.01	-0.10**	-0.05**	-0.15**	0.02	0.30**	-0.02	0.00	1.00	
10. Multiple workplace dummy	.48	.49	0.07**	-0.00	0.11**	-0.16**	0.04	0.35**	-0.04*	-0.03*	0.17**	1.00

*p < 0.05, ** p<0.01

Table 2. Fixed-Effects Regression Models with Panel Data

Variables	Model 1 Exploration-Exploitation	Model 2 Exploration-Exploitation	Model 3 Exploration-Exploitation	Model 4 Exploration-Exploitation
Constant	3.386** (0.285)	3.457** (0.286)	3.491** (0.288)	3.647** (0.591)
Workplace size	0.0233 (0.0476)	0.0195 (0.0475)	0.0126 (0.0476)	0.0488 (0.0925)
Absorbed slack	0.00773 (0.0150)	0.00734 (0.0150)	0.00792 (0.0150)	0.178 (0.128)
Potential slack	0.00150 (0.00152)	0.00149 (0.00152)	0.00148 (0.00152)	0.00226 (0.00218)
Workplace age	-0.000316 (0.00551)	-0.00155 (0.00551)	-0.00162 (0.00551)	-0.0135 (0.00867)
Multiple workplace dummy	0.122 (0.0760)	0.125† (0.0758)	0.122 (0.0758)	0.0213 (0.120)
Performance above aspirations	0.0652† (0.0382)	0.0485 (0.0385)	0.0492 (0.0385)	0.0332 (0.0581)
Performance below aspirations (H1)		0.195** (0.0610)	0.0378 (0.0949)	0.188 (0.120)
Employee turnover rate			0.0276 (0.187)	
Organizational conflict				0.362 (0.839)
PBA × Turnover rate (H2)			1.074* (0.500)	
PBA × Organizational conflict (H3)				0.544 (1.917)

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Observations	3,052	3,052	3,052	1,454
R-squared	0.003	0.008	0.010	0.014
Number of workplaces	836	836	836	549

Standard errors in parentheses

†p < 0.10, * p<0.05, ** p<0.01