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Human Resource Management and Firm Performance: Testing a Contingency Model of Executive Controls

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This study examined the relationship between human resource management (HRM) controls used by executives and changes in the financial performance of their firms (ROA and sales growth). Results from 102 single product firms indicate that, as hypothesized, when the approach to HRM was based on behavior control, firm performance was higher when executives had complete knowledge of cause-effect relations. HRM based on output control had neither a direct nor a moderating effect on firm performance. When the approach to HRM was based on input control, performance was higher when standards of desirability were ambiguous. From a practical standpoint, these findings suggest that executives should be cognizant of several contingencies that might guide their choice among various approaches to HRM, as well as the effects these choices have on the performance of their firms. From a research standpoint, there are several issues raised in this study that suggest avenues for future investigation on HRM, control, and performance.

Because any discussion about how an organization succeeds or fails ultimately comes back to the way individuals are managed, we can presume that human resource management (HRM) is—or, at least, *should* be—inexorably tied to firm performance. In fact, both academics and practitioners agree that as the dynamics of competition accelerate people are perhaps the only truly sustainable source of competitive advantage (Prahalad, 1983; Reich, 1990; Stewart, 1990). Thus, effective management of human capital, even more so than physical capital, may be the ultimate determinant of organizational performance and survival.

Although performance and its improvement have always been central issues in HRM research, until recently the preponderance of work has focused on individual performance and other aspects of manager/employee behavior and productivity (Cascio, 1991). This focus has yielded a rich stream of research,

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especially as it pertains to utility analysis (Boudreau, 1983; Schmidt, Hunter & Pearlman, 1979), but the current effort is directed toward closing the gap between what individuals do and what organizations accomplish (Schmitt & Schneider, 1984).

This study examined how the approach senior executives take toward HRM is related to changes in the financial performance of their firms (return on assets and sales growth). Only the HRM practices used by executives were examined since there tends to be substantial variance at different levels within the firm (Schuler & Jackson, 1989). However, concentrating on executives seemed especially warranted when one considers the degree of influence executives have over the conduct and outcomes of their firms. As Hambrick (1989, p. 5) noted, "If we want to explain why organizations do the things they do, or, in turn, why they perform the way they do, we must examine the people at the top."

Development of a Theoretical Framework

A number of researchers have suggested that HRM practices such as selection (Dimmick & Murray, 1978; Zajack, 1990), training (Russell, Terborg & Powers, 1985), performance appraisal (Schuster, 1984), and reward systems (Balkin & Gomez-Mejia, 1987; Murphy, 1985; Zajack, 1990) may each bear some relationship to firm performance. However, since staffing, training, appraisal and rewards do not operate independently of one another, research is needed that examines the net effect of an array of HRM practices used in concert (Cook & Ferris, 1986; Mahoney & Deckop, 1986). Wright and McMahan (1992) have argued that approaching research in this way requires that we recast HRM as a theoretical construct, rather than simply looking at isolated employment practices.

In the past, the construct of control has been used as a lens for combining HRM practices (cf. Eisenhardt, 1985; Gupta & Govindarajan, 1991; Kerr, 1985; Lawler & Rhode, 1976; Snell, 1992). The underlying premises of HRM control theory are: (1) Organizations emerge, survive, and thrive because individuals can accomplish more collectively than they might on their own (Eisenhardt, 1985; Hrebiniak, 1978); (2) Individuals may act in ways that serve their self-interest, but detract from the organization as a whole (Barnard, 1938; Jensen & Meckling, 1976); (3) HRM is one of the principal mechanisms by which managers integrate the actions of individuals to keep them conformant with the interests of the firm (Goold & Quinn, 1990). Thus, organizational performance is the *raison d'etre* for HRM control—its mismanagement can lead to confusion, inefficiency, and the like, but the absence of HRM control ultimately leads to organizational demise (Hrebiniak, 1978).

Table 1 outlines three basic approaches to HRM control: two are based on performance evaluation and reward systems, while the third is a values-oriented system based on careful selection and training (Eisenhardt, 1985; Govindarajan & Fisher, 1990; Merchant, 1985; Ouchi, 1977; Snell, 1992; Thompson, 1967). These three approaches are not mutually exclusive, and are frequently used in combination (Ouchi, 1979; Snell, 1992). However, each is

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Table 1. Types of HRM Control Systems[1]

	HRM Practices	*Assumptions*
Behavior Control	*Responsibilities* are standardized and imposed top-down with an overriding concern for *procedures* and methods. Employees are accountable for their actions, regardless of results. *Appraisals* are based on supervisor observation of behavior. *Feedback* is used as a remedial tool.	*Performance is enhanced when idiosyncratic action is constrained. Reliable role behavior* leads to *efficiency* that facilitates operations. Most appropriate in those circumstances that characterize a *closed* system: the task environment is stable, and knowledge of *cause-effect relationships* are complete.
Output Control	Mutually set *performance targets* (e.g., goals, objectives). Subordinate *performance appraisals* are based on the results they achieve (e.g., MBO), and *monetary rewards* are closely linked to performance outcomes.	Performance requires flexible pursuit of opportunities that arise unexpectedly. Orientation toward *goal accomplishment* as a means for achieving *effectiveness*. Most appropriate in an *open* system where *performance standards* are crystallized.
Input Control	Rigorous *selection* and *training* help to socialize employees to ensure they have requisite *abilities* as well as understand and internalize the *values* and goals of the organization. In this way they are likely to act in the interest of the firm on their own.	Loyalty and commitment eliminate divergent interests and create an environment of *cooperation*. Most viable when performance standards are *ambiguous* and knowledge of cause-effect relationships are *incomplete*.

Notes: 1. Adapted from Eisenhardt (1985), Ouchi (1977, 1978), and Snell (1992).

based on a different set of assumptions about the requirements for performance. By extension, the viability of any approach to HRM *vis a vis* performance is hypothesized to depend upon correctly matching the appropriate control system (and its associated assumptions) with actual administrative contexts encountered by executives.

Behavior Control as a Foundation for HRM

Behavior control is based on the traditional bureaucratic premise that performance can be maximized by protecting the firm from extraneous disturbances, "implicitly treating the organization as a closed system" (Jaeger & Baliga, 1985, p. 122). Though the notion of a closed system is perhaps overly restrictive—indeed it would be difficult for any ongoing concern to be closed off from the environment—many organizations act *as if* they were trying to buffer the internal core from external forces (Thompson, 1967). In effect, behavior control eliminates uncertainty and increases predictability by routinizing the transformation process (Ouchi, 1977; 1978; Ouchi & Maguire, 1975). Operationally, this includes the following HRM practices: standard

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operating procedures (e.g., job descriptions), behavioral performance appraisal, close supervision, and feedback. Standard operating procedures make employee responses to the task environment highly predictable (Khandwalla, 1973; March & Simon, 1958). Close supervision ensures that standardized procedures are carried out as specified. Behavioral performance appraisals and feedback help to correct any procedural problems that may exist. By attempting to regulate action, this approach to HRM focuses on issues such as reliability and efficiency. As a consequence of this internally focused operational approach to HRM control, any improvements in organizational performance would likely derive from increases in productivity.

Proponents of behavior control argue that such an approach to HRM can be quite effective so long as the task environment remains stable and predictable over time. Not surprisingly, several studies have shown that use of behavior control is positively related to the completeness of information about *"cause-effect relations"*—the linkage between actions individuals take and the outcomes they achieve (Ouchi & Maguire, 1975; Snell, 1992; Thompson, 1967, p. 84). However, as Child (1972) and others have pointed out, managers frequently impose their own personally preferred approaches to management, even when the technical and administrative imperatives of the firm might indicate otherwise. Since behavior control reinforces stability and reliability, it generates momentum toward self-stabilization (Jaeger & Baliga, 1985). If behavior control is forced under conditions of incomplete cause-effect relations, then the organization is likely to become needlessly rigid and unresponsive to change—acting as a closed system in an open systems environment (cf. Hrebiniak, 1978; Merton, 1957). Accordingly, performance would likely suffer due to an overemphasis on rules and procedures (Turcotte, 1974). This is the paradox of the bureaucratic form; it is efficient at managing routine tasks, but slow to accommodate change due to uncertainty (Cheng & McKinley, 1983). Thus:

> **H1**: *HRM based on behavior control is positively related to firm performance when knowledge of cause-effect relations is complete, but negatively related to performance when such knowledge is incomplete.*

Output Control and a Foundation for HRM

The second approach to HRM, output control, is more consistent with the characteristics of an open system. Rather than standardizing the processes of work per se, output control standardizes results. Performance appraisals are outcome-oriented (e.g, MBO) and rewards are contingent on performance. By linking personal interests with the achievement of organizational targets, such an approach to HRM gives individuals discretion over the processes they use, but still provides incentives for outcomes that benefit the firm (cf. Kerr, 1985). This facilitates the efforts to address opportunities and threats that arise unexpectedly (Michael, 1973). In addition, since results information tends to be readily available when using output control, subordinates can acquire a great deal of performance data, on their own, and make adjustments without the

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intervention of superiors. These two features, adaptability and self-maintenance, distinguish output control as an open system's approach to HRM (cf. Boulding, 1956). Rather than routinizing behavior to maximize efficiency, HRM and performance are more externally oriented toward issues of effectiveness and goal accomplishment (Hofstede, 1978; Turcotte, 1974).

Although agency theory suggests that output control has the potential for providing employees with more discretion to exercise judgment and be creative, several authors have noted that just the opposite may occur (Hitt, Hoskisson & Ireland, 1990; Jaeger & Baliga, 1985). Since output control requires subordinates to bear more risk of the firm, they frequently take safer courses of action and pursue shorter-term objectives (e.g., Hayes & Abernathy, 1980; Hrebiniak & Joyce, 1986). Hill and Hoskisson (1987), for example, noted that use of annual ROI targets encourages subordinates to maximize short run profitability. However, as an unintended consequence, they tend not to produce innovation necessary to sustain competitiveness.

From these arguments we can infer that output control may either have a negative or a positive effect on firm performance. To reconcile this contradiction, we must take into account another aspect of the administrative context: "*crystallized standards of desirability*" (Thompson, 1967, p. 84). Based on the notion of a unidimensional utility function, a crystallized standard refers to the pursuit of a singularly valued performance outcome. The evidence is clear from previous research that output control tends to be used more when standards of desirability are crystallized (Hofstede, 1978; Ouchi, 1977, 1978). But as with behavior control, the purpose of this study was not to determine the causes of output control, but to assess how firm performance changes as a function of the interaction between output control and standards of desirability.

As long as the firm has very clear, crystallized objectives, then an output orientation to HRM may elicit acceptable performance. In this instance, goals of the organization can be specified via the control system. However, in cases where a firm pursues many different objectives, or performance standards are ill-defined or change repeatedly over time, reliance on output control is likely to reinforce myopic pursuit of measured targets to the exclusion of other relevant though perhaps subtle outcomes (Jaeger & Baliga, 1985). Accordingly, the overall performance of the firm would likely suffer over time, even though individuals might be achieving the outcomes specified via the HRM control system. Thus:

> **H2**: *HRM based on output control is positively related to firm performance when standards of desirability are crystallized, but negatively related to firm performance when standards are ambiguous.*

Input Control as a Foundation for HRM

The third approach to HRM, input control, has been discussed only tangentially in previous research (cf. Jaeger & Baliga, 1985; Merchant, 1985;

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Ouchi, 1977; Snell, 1992). In contrast to behavior and output control, which assume the interests of individuals and the firm naturally diverge, input control assumes that HRM practices can be used to develop a set of employees with homogeneous values. Rather than using external inducements, input control involves carefully selecting, training and developing individuals who are intrinsically dedicated to the firm. As Eisenhardt (1985, p. 135) put it:

> Control can be achieved by minimizing the divergence of preferences among organizational members. That is, members cooperate in the achievement of organizational goals because the members understand and have internalized these goals. This strategy emphasizes people policies such as *selection, training, and socialization* (emphasis added).

At first glance, it would be difficult to think of an instance where HRM built on rigorous staffing and training would be dysfunctional. Most any firm could benefit from efforts to ensure a capable and dedicated work-force (Russell et al., 1985; Schmitt & Schneider, 1984). Further, input control can help create goal congruence among organization members by "searching for and selecting people who fit the needs of the firm" thereby allowing executives to "expect high commitment as a result of internalized values" (Ouchi, 1979, pp. 840-841). And when behavior and output control are not used, the value of input control to executives would seem to be especially high.

Previous theorists have positioned input control as a "fall-back" strategy to be relied on when both cause-effect knowledge is incomplete and standards of desirability are ambiguous (e.g., Ouchi, 1977; Thompson, 1967). In cases of incomplete cause-effect knowledge, executives can expect actions consistent with the interests of the firm without having to spell out the specific behavioral sequences required of individuals. Likewise, without crystallized performance standards, executives can utilize input control to ensure that individuals take appropriate actions—adaptively, autonomously, and in a timely fashion—without having to articulate the precise criteria by which they will be evaluated. In fact, if the thrust of input control is selecting and developing a talent pool that can be empowered to initiate action, efforts to over-regulate behaviors and outcomes might be antithetical to the success of this approach to HRM. Nevertheless, in the only empirical study on this issue, Snell (1992) found a positive relationship between input control and the interaction of cause-effect knowledge and standards of desirability. While that study was only descriptive, and made no reference to performance, the findings indicate that previous research and theory on input control may not be as well-conceived as that for behavior or output control. Govindarajan and Fisher (1990) similarly noted that research on input control is needed to reexamine its conceptual, theoretical and empirical underpinnings.

> **H3**: *HRM based on input control is positively related to firm performance when knowledge of cause-effect relations is incomplete and standards of desirability are ambiguous.*

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Standards of Desirable Performance	Knowledge of Cause/Effect Relations: complete	Knowledge of Cause/Effect Relations: incomplete
crystallized	Behavior Control and/or Output Control	Output Control -decentralized -results criteria -perf/reward link
ambiguous	Behavior Control -centralized -procedures -supervision -behavior appraisal	Input Control -rigorous staffing -train/develop -socialization

Source: Adapted from Eisenhardt (1988), Ouchi (1977, 1978), Snell (1992), Thompson (1967).

Figure 1. Administrative Information and HRM Control

One caveat to the conventional wisdom about input control is Schneider's (1987) argument that reliance on input control may create a stagnant organization over time by attracting, selecting, and retaining an overly homogeneous group of employees. While this group may be talented and cohesive, this use of input control may limit the richness of ideas that stem from multiple perspectives being brought to bear on a problem. Further, Jaeger and Baliga (1985, p. 128) noted:

> Owing to the very nature of such a [control] system, members are rewarded for holding and conforming to the accepted organizational values and perspectives. This leads to loyalty but may stifle innovation as it discourages the free thinking that is necessary to 'dream up' innovative new products.

Stated differently, use of input control at higher levels especially, may lead to a work environment that perpetuates the status quo. If this is so, then input control may be counter productive if it discourages flexibility in environments characterized by change, uncertainty and ambiguity. As Bourgeois (1980) found, when members of an organization achieve goal consensus without a clear understanding of how their efforts will lead to the accomplishment of desired goals (e.g., cause-effect knowledge), the firm tends to perform poorly rather than effectively. Clearly these contrary notions represent the foundation, perhaps, for a crucial experiment (cf. Platt, 1964).

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The hypothetical relationships of behavior control, output control, and input control to each other and to aspects of administrative information (knowledge of cause-effect relations, and standards of desirable performance) are summarized in Figure 1.

Effects of Exogenous Factors

There are a host of factors other than those included in the theoretical model that may affect HRM control, administrative information, and firm performance. Several researchers have shown that technology, strategy, size, etc. may partially influence HRM practices and administrative information (e.g., Chandler, 1962; Egelhoff, 1982; Gupta & Govindarajan, 1984; Guthrie & Olian, 1991; Jackson, Schuler & Rivero, 1989; Kerr, 1985; Miles & Snow, 1978; Snell, 1992). These same forces may also affect firm performance, as could the level of growth, competition, and volatility in the industry environment (Dess, Ireland & Hitt, 1990; Keats & Hitt, 1988). While exogenous factors in the organizational and industry environments were beyond the scope of this study, their effects were statistically removed to prevent any possible contamination or confounding of the findings. Further discussion of this issue is provided below.

Method

Sample and Procedure

Only firms with a single business unit were considered for this study since multidivisional (M form) firms were more likely to have several different HRM control systems across autonomous business units (cf. Govindarajan & Fisher, 1990). A sample of 436 firms listed in the Directory of Corporate Affiliations were identified, each with revenues and assets above $10 million, and each having at least 250 employees. These sampling criteria eliminated the possibility of including very small firms that might not have formal HRM procedures.

Presidents. The presidents of each firm were contacted to ask for their participation in the study. As part of a larger research project, each president was mailed a cover letter and a questionnaire designed to assess organizational context, administrative information and HRM control systems. After three weeks, a prompting letter and a second questionnaire identical to the first were mailed to all those presidents who had not yet responded. In total, 140 of the 436 (32 percent) presidents returned usable questionnaires. These executives represented firms in 92 different industries (4 digit SIC), a sample characteristic designed to increase the external validity of the findings.

Vice presidents. After providing information themselves, each president was asked to submit the names of three immediate subordinate line executives, and 102 (73 percent) complied. Each of these executives was contacted and asked to complete a questionnaire identical to the president's. By utilizing multiple sources it was possible to obtain independent assessments of the research constructs and, in addition, assess interrater reliability across executives (James, Demaree & Wolf, 1984). After three weeks, a second questionnaire and prompting

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letter were mailed. Usable data was obtained from 175 of the 306 vice presidents (57 percent). A case was considered usable if at least one vice president from a firm responded. Using this criterion, the sample size for the study was 102.

Measures

HRM Control Systems. The three measures of HRM control developed by Snell (1992) were used: *Behavior control* was a six item Likert scale that measured the degree to which standards and procedures are programmed top-down (i.e., centralized), performance is measured using superior surveillance of subordinate behavior, appraisal is based upon improvement over time, and feedback is provided frequently; (2) *Output control* was a twelve item Likert scale measuring the degree to which performance is measured via results, evaluations are based upon preset targets, and rewards are tied to performance; (3) *Input control* was a seven item Likert scale measuring the degree of emphasis placed on staffing procedures and the opportunity provided for training and development.

Administrative Information. The two measures of administrative information were developed by Snell (1992) based on items used by Ouchi and Maguire (1975) and Ouchi (1977, 1978): (1) *Knowledge of cause-effect relations* was a six item Likert scale that measured the extent to which the relationship between subordinate actions and outcomes could be predicted and observed; (2) *Crystallized performance standards* was a five item Likert scale measuring the extent to which executives have clearly defined and articulated standards that indicate performance benefiting the firm.

Firm Performance. Two different measures of firm performance were utilized for this study: Return on assets and growth in sales: (1) *Return on assets:* ROA data was used as a measure of efficiency and resource utilization (Keats, 1988; Chakravarthy, 1986). ROA data was obtained for the years 1984-1989 (Source: Department of Commerce Survey of Manufactures, Moody's Industrials). These data were then broken down into two time periods: ROA(t_1 was the three year average (1984-1986) of the firm's return on assets for the years immediately preceding the collection of HRM data and ROA(t_2) was the three year average (1987-1989) of the firm's return on assets for the years immediately following the collection of HRM data. To avoid confounds due to extraneous differences across firms, ROA(t_1) was used as a baseline, and was factored out of each equation prior to examining the hypothesized effects on ROA(t_2); (2) *Growth in sales*: To complement the efficiency focus of ROA measures, data on sales growth was collected as a market measure of effectiveness that specifically focused on the degree to which customers were accepting the firm's products and/or services. Sales data was collected for the years 1986 to 1989 (Source: Compact Disclosure). An annual index of sales growth was calculated by subtracting the previous year (e.g., 1986) from each subsequent year (e.g., 1987), and then dividing by the previous year (1986). This calculation was performed for each of the three years following the collection of HRM control data. The average of these annual ratios was then used as an overall index of sales growth.

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Industry Environment. Since firm performance tends to vary across industries, the effects of three variables were factored out of each equation prior to examining the hypothesized relationships (cf. Dess, Ireland & Hitt, 1990) (Sources: Department of Commerce Survey of Manufactures, Moody's Industrials): (1) *Munificence* was measured following the procedure suggested by Keats and Hitt (1988). The natural log of sales was regressed against time to determine average growth in sales for the years 1982-1986 (these were the five years immediately preceding data collection for the HRM variables). The antilog of the regression slope was used as an index of munificence; (2) *Dynamism* was measured using the antilogs of the standard error term from each regression equation described above. This was viewed as an index of the degree of volatility in industry sales (Keats & Hitt, 1988); and (3) *Complexity* was measured using the MINL formula of sales concentration developed by Schmalensee (1977) to approximate a Herfindahl-Hirschman index of industry complexity (Boyd, 1990).

Organizational Context. Finally, data related to organizational context were also collected: (1) *Firm size* was measured using the number of full time employees (Source: *Standard and Poor's Directory of Corporate Affiliations*, 1986). Following Child (1974) and Kimberly (1976), a natural logarithmic transformation was used to account for the curvilinear relationship between size and structural complexity; (2) *Technology* was measured using the instrument designed by Van de Ven, Delbecq and Koenig (1976) to operationalize Thompson's (1967) three types of workflow integration (independent, sequential, reciprocal); and (3) *Strategic posture*was measured using an 11 item Likert scale developed by Snell (1992) to position firms along a continuum from narrow/stable to broad/varied strategic posture (Miles & Snow, 1978).

Results

The means, standard deviations, alphas, inter-rater agreement (IRA) and intercorrelations are shown in Table 2. The alphas indicate internal consistency, and the inter-rater reliabilities indicate convergence within each firm (James, Demaree & Wolf, 1984, 1993). Based on the high level of convergence, the mean rating among executives within each firm was used to measure HRM control and administrative information.

HYPOTHESIS 1: Behavior Control as a Foundation for HRM

Table 3 shows the results of hierarchical regression analysis for the effect of behavior control on ROA and sales growth. The first step of the regression analysis controls for extraneous variables that might otherwise confound the empirical relationships of interest. For example, ROA(t_1), industry environment (munificence, dynamism, complexity) and organizational context (strategy, technology, size) were entered into the equation as a set to eliminate their extraneous effects on ROA(t_2). Similarly, input control and output control were also entered in this step to control for their covariance with behavior control.

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Table 2. Means, Standard Deviations, Alphas, IRRs and Intercorrelations

	$\bar{x}$	*sd*	*ira*	*alpha*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. ROA (T_1)	5.49	5.11	na	na	—													
2. ROA (T_2)	9.46	6.59	na	na	.51	—												
3. Sales Growth	.09	.17	na	na	.30	.18	—											
4. Complexity	.06	.05	na	na	-.01	-.06	.03	—										
5. Dynamism	1.04	.05	na	na	-.08	.12	.03	-.08	—									
6. Munificence	1.09	.14	na	na	-.09	.16	.03	.03	.28	—								
7. Strategy	3.72	.99	.78	.83	-.04	.02	.14	-.01	-.03	.14	—							
8. Technology	2.61	.53	na	.86	-.05	.13	.09	.05	-.05	.03	.06	—						
9. Size	7.12	1.12	na	na	-.11	.21	-.18	.03	-.01	.06	.12	.24	—					
10. Cause-Effect	3.86	.70	.87	.65	-.04	.12	.06	-.02	.04	.05	.08	.15	-.03	—				
11. Perf Stndrds	5.00	.92	.77	.83	-.14	.00	-.15	-.17	-.01	-.01	.24	.16	.08	.35	—			
12. Behavior	5.00	.65	.87	.68	.06	.02	-.05	-.23	-.03	-.06	.29	.11	.09	.15	.51	—		
13. Output	4.12	.58	.88	.71	-.30	-.06	-.11	-.19	.02	-.02	.21	.03	.19	.11	.43	.37	—	
14. Input	4.84	.71	.86	.75	.05	.13	.09	-.08	.04	.02	.26	.13	.14	.22	.29	.51	.08	—

Notes: na = not applicable.
Zero order correlations above .20 are statistically significant at $p < .05$.

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Table 3. Hierarchical Regression of Behavior Control and Firm Performance

dv =	*ROA*(t_2)				*Sales Growth*			
Statistic:	R^2	ΔR^2	*F*	*b*	R^2	ΔR^2	*F*	*b*
Step 1:	.25	.25	1.16		.19	.19	.77	
- ROA(t_1)				0.04*				—
- munif				0.64				0.07
- dynam				11.34				0.48
- cmplx				-1.31				0.30
- strat				-1.07				0.03
- tech				-0.85				0.03
- size				0.44				-0.06+
- output				-0.10				-0.01
- input				-0.21				0.04
- (constant)				-3.92				-0.40
Step 2:	.56	.31	6.81**		.41	.22	2.98*	
- behavior				2.25**				0.00
- cause				4.44**				0.13*
- stndrd				-4.57**				-0.13**
- (constant)				1.34				0.45
Step 3:	.66	.10	3.11*		.62	.21	5.58**	
- beh × cause				2.04*				0.20**
- beh × stndrd				1.77				-0.04
- (constant)				81.83				2.55
Final F:			3.50**				2.61**	

Notes: a. Unstandardized betas reported.
+ $p < .10$, * $p < .05$, ** $p < .01$.

This analysis showed R^2=.25 (F=1.16, p=ns) for ROA(t_2) and R_2=.19 (F=.77, p=ns) for sales growth.

After controlling for firm and industry context, step 2 examined the direct effects of behavior control and administrative information (cause-effect knowledge, crystallized performance standards) on the dependent variables. This step was statistically significant for both ROA (ΔR^2=.31, F change=6.81, $p < .01$) as well as sales growth (ΔR^2=.22, F change=2.98, $p < .05$). Looking more closely, we see a direct positive effect of behavior control on ROA (b=2.25, p<.01), but not on sales growth. Interestingly, knowledge of cause-effect relations was a positive predictor for both ROA (β=4.44, t=3.01, p<.01) as well as sales growth (b=.13, t=2.15, p<.05). Similarly, crystallized performance standards was also a significant predictor of both ROA (b=−4.57, t=−3.45, p<.01) and sales growth (b=−.13, t=−2.60, p<.01). However, in contrast to the other direct effects, the impact of crystallized standards on performance was negative.

In step three, the two way interactions (behavior × cause-effect, behavior × standards) were added. This step also had a significant incremental effect on ROA (ΔR^2=.10, F change=3.11, p<.05) as well as sales growth (ΔR^2=.21, F change=5.58, p<.01). The interaction of behavior control and cause-effect

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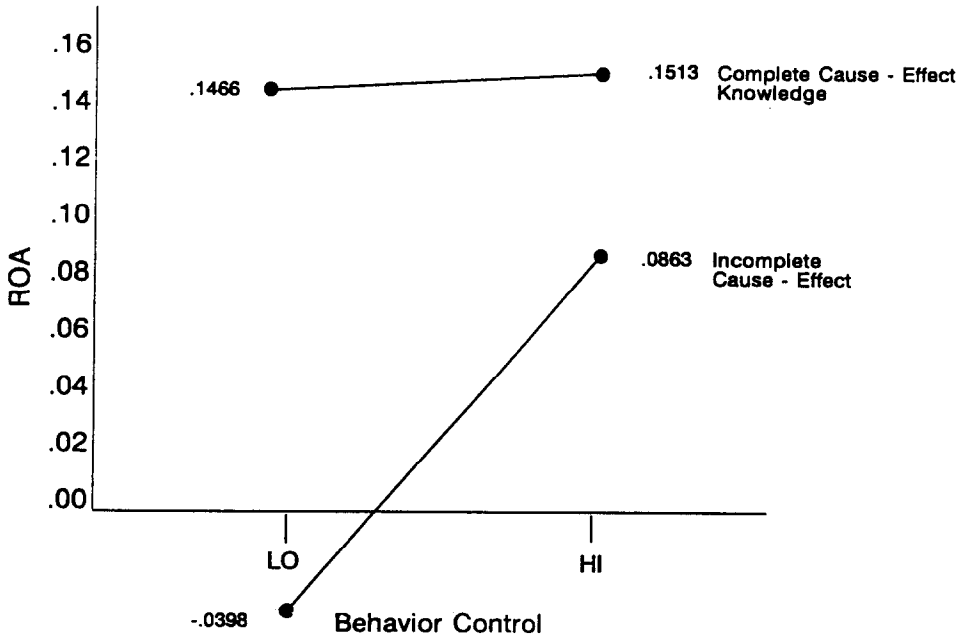

Figure 2. Behavior Control and ROA

knowledge was positive for both ROA (β=2.04, t=2.16, p<.05) and sales growth (β=.20, t=3.27, p<.01).

These results can be seen graphically in Figures 2 and 3 by using the data from the regression equation to plot four different prediction coordinates (Stone & Hollenbeck, 1984, 1989). When a combination of high behavior control (operationalized as one standard deviation above the mean for that variable) and high cause-effect knowledge (also operationalized as one standard deviation above the mean) were entered into the prediction equation, the predicted value for ROA was just above 15% (.1513). In contrast, when the combination of low behavior control (one standard deviation below the mean) and low cause-effect knowledge (one standard deviation below the mean) were entered into the prediction equation, the predicted ROA was negative (−.0398).

Figure 3 shows that the plots look a bit different for sales growth. Recall, there was no direct effect of behavior control on ROS and, indeed, the plotted values bear out this fact. Although the highest predicted value of sales growth occurred with the combination of high behavior control and high cause-effect knowledge (.392), the lowest predicted value of the dependent variable occurred with the combination of high behavior control and low cause-effect knowledge (.0205). In this case, it appears that forcing behavior control without a good understanding of internal processes may be counterproductive vis-à-vis market expansion.

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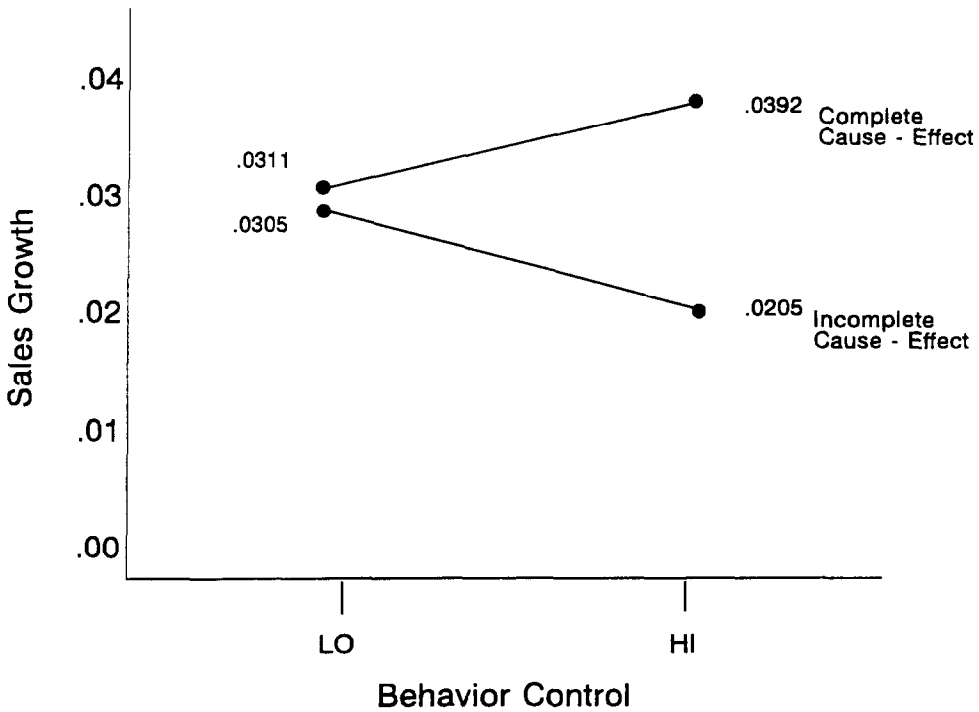

Figure 3. Behavior Control and Sales Growth

Overall, these findings indicate several things: The direct effect of behavior control on ROA suggests that executives may be well advised to focus on processes as a basis for HRM (vis performance appraisal and feedback), particularly if their chief concern is with internal operations and efficiency. Second, the positive effect of behavior control is markedly augmented when executives have a complete understanding of how actions lead to outcomes. In fact, firms tend to perform better when executives have a clear understanding of how member actions lead to outcomes—regardless of the approach they take toward HRM. Finally, if executives do not have a clear understanding of cause-effect relationships, perhaps due to their focus on sales growth rather than internal operations and ROA, then use of behavior control may not be as advisable. These findings support **H1**.

HYPOTHESIS 2: Output Control as a Foundation for HRM

An identical procedure was used to analyze the effect of HRM based on output control (shown in Table 4). After controlling for industry and strategic context, as well as behavior and input control, the effects of administrative information and output control accounted for a statistically significant increase in ROA (ΔR^2=.27, F change=5.81, $p<.01$) and sales growth (ΔR^2=.22,

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Table 4. Hierarchical Regression of Output Control and Firm Performance

dv =	*ROA*(t_2)				*Sales Growth*			
Statistic:	R^2	ΔR^2	*F*	*b*	R^2	ΔR^2	*F*	*b*
Step 1:	.30	.30	1.46		.19	.19	0.79	
- ROA(t1)				0.04*				—
- munif				2.85				0.03
- dynam				18.31				0.39
- cmplx				7.59				0.38
- strat				-1.43+				0.03
- tech				1.42				0.03
- size				-0.92				-0.06+
- behavior				1.50+				-0.02
- input				-0.47				0.05
- (constant)				-17.70				-0.27
Step 2:	.57	.27	5.81**		.41	.22	2.92*	
- output				-1.72+				-0.01
- cause				4.44**				0.13*
- stndrd				-1.72**				-0.14**
- (constant)				1.34				0.45
Step 3:	.59	.02	0.49		.45	.04	0.76	
- out × cause				1.04				0.04
- out × stndrd				2.85				0.14
- (constant)				80.57				4.24
Final F:			2.61**				1.35	

Notes: a. Unstandardized betas reported.
+ $p < .10$, * $p < .05$, ** $p < .01$.

F change=2.92, $p<.05$). However, the majority of the variance was explained by cause-effect knowledge and performance standards (discussed above in the analysis for behavior control). Output control had a marginal negative effect on ROA ($b=-1.72$, $t=1.55$, $p<.10$) but not on sales growth.

In step 3, the effects of the two-way interactions were not statistically significant for either ROA nor sales growth.

Overall, these findings indicate that HRM based on output control (e.g., results appraisal, performance-contingent compensation) may be associated with lower profitability. In addition, when executives focus on very sharply defined performance criteria, their firm's performance tends to suffer. While these direct effects were not accompanied by an interaction between the two variables, the findings may be especially noteworthy when one considers that ROA(t_1) was negatively correlated ($r=-.30$, $p<.01$) with the subsequent use of output control (see Table 2). This longitudinal pattern may signal the onset of a negative spiral if, for example, executives in poor performing firms (at time 1) utilize output control more which, then, leads to even poorer performance (at time 2). This possibility is addressed further in the Discussion section.

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Table 5. Hierarchical Regression of Input Control and Firm Performance

dv =	*ROA*(t_2)				*Sales Growth*			
Statistic:	R^2	ΔR^2	*F*	*b*	R^2	ΔR^2	*F*	*b*
Step 1:	.31	.31	1.52		.14	.14	0.55	
- ROA(t1)				0.04*				—
- munif				2.52				0.10
- dynam				18.06				0.40
- cmplx				-0.22				0.49
- strat				-1.63*				0.03
- tech				0.95				0.04
- size				-0.84				-0.06+
- behavior				1.75+				-0.01
- output				-0.99				0.00
- (constant)				-14.49				-0.20
Step 2:	.58	.27	5.64**		.40	.26	3.58**	
- input				0.02				0.04
- cause				4.44**				0.13*
- stndrd				-4.57**				-0.14**
- (constant)				1.34				0.45
Step 3:	.68	.10	2.44*		.65	.25	4.85**	
- input × cause				-0.82				-0.08
- input × stndrd				2.62*				0.12*
- cause × stndrd				5.98**				0.31**
- (constant)				185.97**				8.13
Step 4:	.68	.00	0.31		.65	.00	0.30	
- in × caus × stndrd				0.00				0.00
- (constant)				83.31				38.11
Final F:			2.61**				1.35	

Notes: a. Unstandardized betas reported.
+ $p < .10$, * $p < .05$, ** $p < .01$.

HYPOTHESIS 3: Input Control as a Foundation for HRM

Finally, the statistical analysis was repeated once more, this time using input control as the focal HRM variable (results are shown in Table 5). After controlling for industry and strategic context, as well as concurrent use of behavior and output control, the set of variables entered in step 2 was significant for both ROA (ΔR^2=.27, F change=5.64, p<.01) as well as sales growth (ΔR^2=.26, F change=3.58, p<.01). However, these effects were not due to input control, but rather to knowledge of cause-effect relations and performance standards.

In step 3, the set of two way interactions was also significant for both ROA (ΔR^2=.10, F change=2.44, p<.05) as well as sales growth (ΔR^2=.25, F change=4.85, p<.01). Interestingly, the interaction of input control and performance standards was a significant predictor for both ROA (b=2.62,

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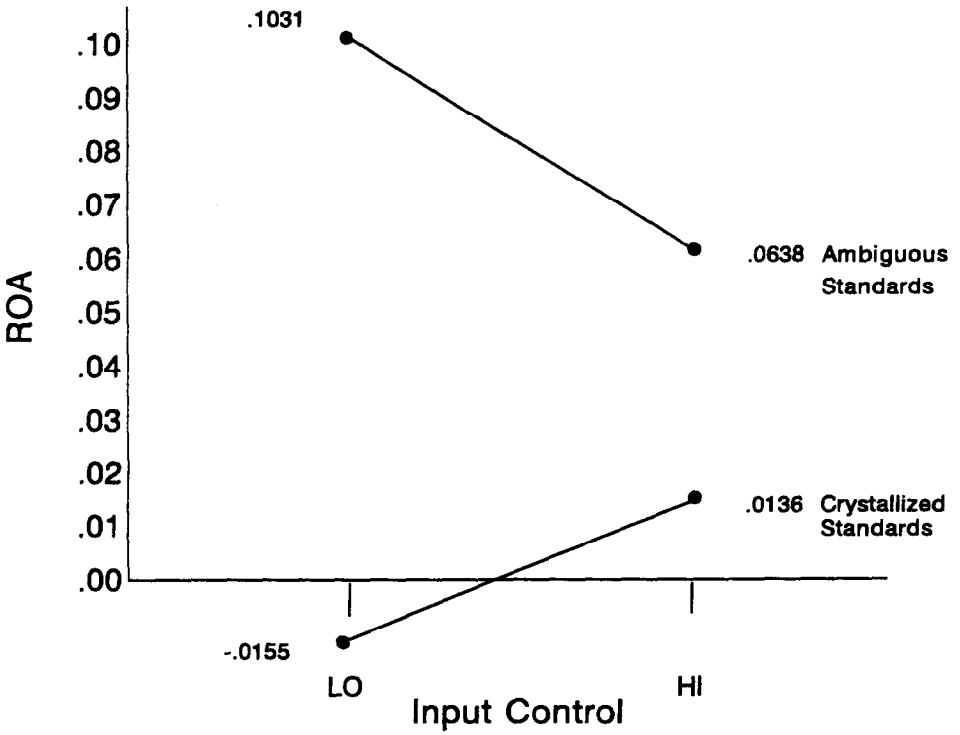

Figure 4. Input Control and ROA

t=2.48, p<.05) as well as sales growth (b=.12, t=2.80, p<.05). The interaction of cause-effect knowledge and performance standards was also significant for both ROA (b=5.98, t=4.59, p<.01) and sales growth (b=.31, t=7.84, p<.01). In step 4, the three way interaction among input control, cause-effect knowledge and performance standards was not significant for either dependent variable.

Figure 4 shows the interaction between input control and performance standards plotted for ROA. In this graph, the highest predicted value of ROA was for low input control and ambiguous standards (.1031). However, the lowest predicted ROA also occurred when input control was low (combined with crystallized standards). In this case, the predicted level of ROA was negative (−.0155). When use of input control was high, ROA varied between 1% (.0136) and 6% (.0638).

Figure 5 shows that the pattern of the interaction is different when plotted for sales growth. It can be seen graphically that the marginal value of input control is highest when standards of performance are ambiguous. In this case, the predicted sales growth exceeds 16% (.1610). In contrast, when performance standards are crystallized, it makes very little difference whether input control is used or not. Sales growth tends to hover around 3% (.0300) to 4% (.0480).

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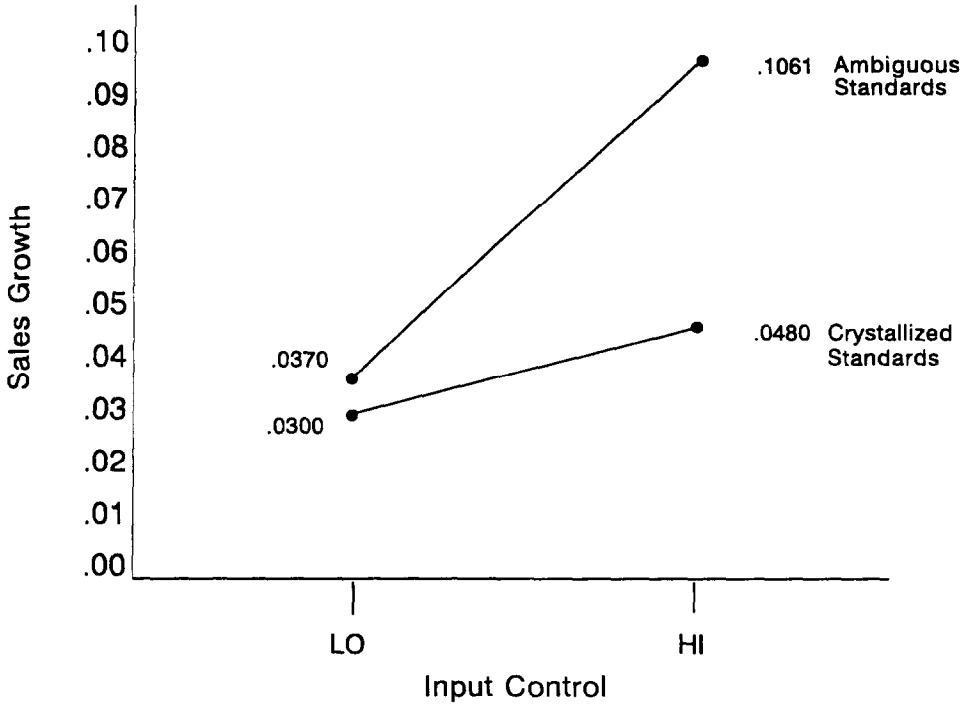

Figure 5. Input Control and Sales Growth

Overall, the findings suggest that input control is most viable (vis performance) as a basis for HRM when executives do not have a clear set of standards by which to evaluate performance. This finding partially supports hypothesis 3 which states that input control is most useful in those ambiguous situations where equivocal information requires socialization toward a common purpose. However, the findings also indicate that the decision to use input control should perhaps be conditioned by the particular measure of performance executives find most important. For example, these data indicate that input control may lead to better performance when standards are ambiguous—but only in the case of sales growth. When ROA is the focal performance measure, increasing input control may actually hurt performance if standards are ambiguous.

Discussion

Overview and Implication of Findings

The primary purpose of this study was to examine how the approaches executives take toward HRM relate to the overall performance of their firms. The findings show several different connections to measures of ROA and sales

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growth. Some of these indicate a direct relationship between HRM and performance, while others show the existence of several contingency relationships (based on the moderating effects of administrative context). The impact on performance can be either positive or negative—but regardless—the findings indicate that an executive's posture toward HRM is not simply a stylistic decision; it can directly affect the bottom line.

Behavior Control. The direct effects of behavior control on both ROA and sales growth suggest that, everything else aside, when executives focus on *processes*, rather than simply outcomes, their firms tend to perform better. It is interesting to note that devotion to process improvements—for example, doing things right the first time, striving for continuous improvement—is universally viewed as the basis for enhancing quality and customer satisfaction (Harrington, 1987; Schonberger, 1986). While there has been a fair amount of research on the role of HRM at the operational level (e.g., Majchrzak, 1988; Snell & Dean, 1992), very little has been written about how HRM can facilitate process improvements at the executive level.

In addition to the direct effects of behavior control, it appears that executives can leverage their best performance by matching this behavioral orientation to HRM with a thorough understanding of cause-effect relationships. This finding, which supports **H1**, suggests that focusing on processes via HRM may be most advantageous in those situations that characterize a closed system (Hofstede, 1978; Jaeger & Baliga, 1985). When the transformation process is well understood and executives can program how actions lead to outcomes, behavior control may have the effect of reducing variability and increasing efficiency (Govindarajan & Fisher, 1990; Khandwalla, 1973).

These contingency relationships also suggest that instead of simply accepting the administrative context as its given, we might also take the tack that executives actually shape the administrative context to suit their own purposes (Thomas & McDaniel, 1990). At least in the single-product firms included in this study, the findings suggest that rather than reducing information processing requirements through control, executives may be well advised to increase their information processing capacity by investing in vertical information systems, lateral relations, and the like (cf. Galbraith, 1973). These efforts would perhaps build an administrative context that is more conducive to the positive benefits of behavior control. In fact, our data suggest that, regardless of orientation to HRM, single product firms perform better when executives have a good understanding of internal operations and the transformation process (irrespective of strategy, technology, size, or industry environment).

Output Control. In direct contrast to the positive effects of behavior control, the negative (albeit tentative) relationship between output control and ROA suggests that the more executives focus on results, the greater the likelihood their firms will perform poorly. Although this finding is opposite to conventional wisdom about executive controls in large multidivisional firms (e.g., Lorsch & Allen, 1973; Pitts, 1976), it is consistent with recent arguments of agency theorists who advise against the use of results based incentives and

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controls (cf. Hoskisson & Hitt, 1988). Since an output orientation toward HRM (via results appraisals and contingent compensation) forces managers to bear more risk, it may lead to myopic thinking and excessively conservative courses of action. Hill & Hoskisson (1987), Rappaport (1978) and others have pointed out that focusing on the bottom line frequently deters executives from making the kind of investments, say in R&D and other process improvements, needed to sustain growth and long term effectiveness.

Although the negative effect of output control was not augmented by an interaction with crystallized performance standards, there were parallel direct effects. Our data suggest that firms perform more poorly when executives utilize—or at least presume they have—crystallized standards by which to judge desired performance. From this, we might conclude that executives should not be overly rigid in their definitions of what constitutes exemplary or even acceptable performance. Crystallized standards may unintentionally convey a message that managers should pursue, single mindedly, only those things that are clearly measured, perhaps to the exclusion of other relevant though less tangible activities required for success. By establishing very precise standards, the net effect might be to decrease creative initiatives (Hayes & Abernathy, 1980). As Ouchi (1979) noted:

> At the extreme, a control mode which depends heavily upon monitoring, evaluating and correcting in an explicit manner is likely to offend peoples's sense of autonomy and of self-control and, as a result, will probably result in an unenthusiastic, purely compliant response... The more obvious and explicit the measurement, the more noxious it is to employees and thus, the greater cost to the organization of employing such methods.

It may also be interesting to note from Table 2 that a firm's previous profitability, ROA(t_1), was negatively correlated with the use of output control as a basis for HRM. Though it is impossible to determine causality, we might speculate that greater prevalence of output control among executives in poorer performing firms may actually be a form of threat-rigid behavior (Staw, Sandelands & Dutton, 1981). Cameron, Whetten, and Kim (1987), for example, pointed out that executives frequently adopt a short-term orientation under conditions of decline to get better focused on the "bottom line." However, as we can see from subsequent data in this study, such a strategy can have debilitating effects. If further use of output control is emphasized, it may lead to even greater deterioration in performance and the creation of a downward spiral (Hambirck & D'Aveni, 1992; Sutton, 1990; Weitzel & Jonsson, 1989). These findings cast serious doubts on the viability of widespread use of results-based appraisal and reward systems among top executives in single product firms. Instead, Hoskisson and Hitt (1988, p. 618) advocated using managerial control systems "that require more top-level understanding and involvement" rather than increasing dependence on standardized performance criteria. As Kotter (1982, p. 141) noted:

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> [A] good performance appraisal system is one that can help a general manager focus on the entire job and can help him balance the various aspects of the job appropriately. As [is] the case with planning systems, it should also be a flexible tool which the general manager can use as a part of his network-building activity. Unfortunately, performance appraisal systems, including those used by a number of the firms in the study, often do neither. All too often they make the balancing act more, not less, difficult by highlighting and rewarding short-run or quantifiable performance only; and by creating conflicts among people, they make network building among subordinates more, not less, difficult.

Input Control. Based on the work of researchers such as Dimmick and Murray (1978), Zajack (1990) and Russell et al. (1985), one would expect that an HRM control system based on inputs (e.g., rigorous staffing, training, socialization) would have a positive impact on firm performance. Further, work by Ouchi (1977; 1979) and Eisenhart (1985) suggests that we might expect the value of input control to be highest when executives cannot rely on either behavior or output control (i.e., incomplete cause-effect knowledge, ambiguous performance standards).

Results from this study partially support these notions—HRM systems based on input control do have a positive effect on performance, particularly in those cases where executives are not locked into very crystallized standards by which to judge performance. In lieu of these strict performance criteria, input control can create goal congruence via selecting members who complement the values of the firm (Ouchi, 1979, pp. 840-841) and whose actions—without scrutiny and surveillance—will be consistent with the interests of the firm. In such instances, executives can expect good performance without having to articulate precisely the criteria by which these individuals would be evaluated. In fact, as was mentioned previously, the more explicit the measurement criteria, the more likely it is to counter the sense of autonomy and self-determination so necessary for input control (Ouchi, 1979).

This relationship between input control and firm performance is consistent with recent work on the transformation to more flexible, knowledge-based organizations (e.g., Nonaka, 1991; Senge, 1993). Especially in high velocity environments (cf. Eisenhardt & Bourgeois, 1988), success depends upon continuously improving and leveraging the firm's knowledge base—frequently without the luxury of being able to extrapolate from past experiences. As deGeus (1988, p. 70) noted, in today's business world, "the root source of all competitive advantage is a company's relative ability to learn." From a strategic standpoint, selecting and developing high caliber individuals to maximize the flexible capabilities of the firm has become the predominant task of HRM (Devanna & Tichy, 1992; Doz & Prahalad, 1986; Pucik, 1988; Snow & Snell, 1993).

Limitations and Future Research Directions

There are some limitations to the data that constrain the interpretation of the findings and suggest areas for future investigation. First, only senior level

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executives in single-product firms were examined. As stated at the outset, these design criteria were judged to be important both in terms of distinguishing this study from other research efforts (Kerr, 1985; Lorsch & Allen, 1973), and in terms of avoiding confounds due to differences across business units (Govindarajan & Fisher, 1990) or levels in the hierarchy (Schuler & Jackson, 1989). Nevertheless, it may now be time for researchers to explicitly compare HRM controls in single- versus multi-product firms and at executive versus operational levels. By combining the data from this study with other such efforts, we can begin to discern a pattern about how HRM fits into the context of organizations. In the future, more comprehensive analysis drawn from a variety of firms would help us draw more generalizable conclusions.

A second limitation to this study is that it used perceptual measures of HRM control, administrative information, strategic posture, and technology. While interrater reliability showed that responses reflected a stable view across executives, it is quite possible that that executives could have a slanted view of HRM control and administrative information based on attributions they make about previous performance (cf. Knowlton & Mitchell, 1980; Mitchell & Wood, 1980). Since we frequently attribute good performance to internal and stable characteristics, while attributing poor performance to external and unstable forces such as bad luck, it is possible that if, say, performance has been good, executives may develop the illusion of control and assume they have more clarity of processes or performance standards than they actually have. Further, they may rationalize poor performance as due to a lack of clarity about processes or goals. While good inter-rater agreement assures us that any idiosyncratic differences across individuals would be randomly distributed, if there is some pervasive attributional bias shared by executives within a firm their collective response may still be skewed. As a caveat, we should of course interpret the findings from this study conservatively. Future research might try to refine the measures to provide a more objective measure of administrative context and HRM control.

A third limitation of the study pertains to the measurement of input control. Specifically, it remains difficult to differentiate informal aspects of clan control (Ouchi, 1979) from more formal aspects of staffing, training, and socialization. While the concept of input control provides a useful heuristic for research, there are many detailed aspects of HRM practices which are not fully operationalized in the current measures. Future research is needed to better reconcile the practical and conceptual issues that go into measuring HRM as a whole (Jackson et al., 1989). From a rational perspective, it should be noted that an emphasis on input control, in and of itself, might not be as important as emphasizing the "correct" inputs required for the firm. An elaborate staffing procedure, for example, is no guarantee that the best person will receive the job (Snell & Dean, 1992). The critical issue, of course, would be to examine the content of staffing and training programs (Schmitt & Schneider, 1984), yet the current conception of input control does not take such details into account. Further, it may be the case that use of selection and training as a basis for HRM is not as important as understanding the auspices under which these practices

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are initiated. From a political perspective, if such an approach to HRM is initiated purely to solidify the position of the dominant coalition, then it may have as many negative as positive consequences on performance. For example, if input control results in an excessively homogeneous organization, it may not preserve the variety of perspectives needed to formulate innovative solutions to novel problems (Bretz, Ash & Dreher, 1989; Schneider, 1987). Unless inertial tendencies can be reconciled, the net effect of input control on performance might eventually be negative.

A fourth limitation of this study is in the measures used to operationalize firm performance. Assessing firm performance via ROA and sales growth assumes that profitability and market impact are proxies for all stakeholder interests. Although such ratios are among the most conventional measures of performance, we know from prior research that such indices do not capture the concerns of other important stakeholders such as employees, environmental or legislative interest groups (Chakravarthy, 1986; Venkatraman & Ramanujam, 1986). As Gerhart and Milkovich (1990) noted, future research might expand the construct domain of performance by operationalizing it more broadly in terms of other dimensions such as survival, adaptability, shareholder wealth, and stakeholder satisfaction. However, it would seem that the core concepts of resource utilization and market acceptance would remain central to any investigation of the HRM-firm performance relationship.

Finally, the theoretical model used in this study could be refined and expanded. As with any model, the present characterization of HRM is an abstraction and, therefore, a simplification of what clearly is a complex and dynamic phenomenon (Wright & McMahon, 1992). Future research might examine the mediating forces that link HRM with firm performance. For example, Schuler (1989) argues that different HRM practices elicit and reinforce different behaviors. These behaviors would likely influence performance via their role in strategy implementation. Such a framework might dovetail nicely with the current work to create a hybrid model of how HRM controls lead to behaviors which, in turn, influence firm performance.

Conclusion

Financial and market performance are certainly not the only criteria by which to judge the value of an approach to HRM (cf. Tsui, 1990). But the survival of any firm rests, in part, on its ability to achieve and maintain a profitable position in the marketplace. To the extent that we can learn more about how HRM controls influence firm performance, we may be able to develop more elaborate models of organizational effectiveness. The general conclusion from this study is that behavioral and input approaches offer the most potential as a basis for improving performance through HRM, while an orientation based solely on output may be detrimental. However, the value of any approach to HRM control can be augmented or diminished by simultaneously managing the type and level of administrative information available to executives. The potential effects of these decisions on firm performance appear to be substantial.

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References

Balkin, D.B. & Gomez-Mejia, L.R. (1987). Toward a contingency theory of compensation strategy. *Strategic Management Journal, 8*: 169-182.

Barnard, C.I. (1938). *The functions of the executive*. Cambridge, MA: Harvard University Press.

Boudreau, J.W. (1983). Economic considerations in estimating the utility of human resource productivity improvement programs. *Personnel Psychology, 36*: 551-576.

Boulding, K.E. (1956). General systems theory—The skeleton of science. *Management Science, 2*(3): 197-208.

Bourgeois, L.J. III. (1980). Performance and consensus. *Strategic Management Journal, 1*: 227-248.

Boyd, B. (1990). Corporate linkages and organizational environment: A test of the resource dependence model. *Strategic Management Journal, 11*: 419-430.

Bretz, R.D. Jr., Ash, R.A. & Dreher, G.F. (1989). Do people make the place? An examination of attraction-selection-attrition hypothesis. *Personnel Psychology, 42*: 561-581.

Cameron, K.S., Whetten, D.A. & Kim, M.U. (1987). Organizational dysfunctions of decline. *Academy of Management Journal, 30*(1): 126-138.

Cascio, W.F. (1991). *Costing human resources: The financial impact of behavior in organizations*. Boston: Kent.

Chakravarthy, B.S. (1986). Measuring strategic performance. *Strategic Management Journal, 7*: 437-458.

Chandler, A.D. (1962). *Strategy and structure: Chapters in the history of american industrial enterprise*. Cambridge, MA: MIT Press.

Cheng, J.L.C. & McKinley, W. (1983). Toward an integration of organization research and practice: A contingency study of bureaucratic control and performance in scientific settings, *Administrative Science Quarterly, 28*: 85-100.

Child, J. (1972). Organizational structure, environment and performance: The role of strategic choice. *Sociology, 6*: 1-22.

———. (1974). Predicting and understanding organization structure. *Administrative Science Quarterly, 19*: 168-185.

Cook, D.S. & Ferris, G.R. (1986). Strategic human resource management and firm effectiveness in industries experiencing decline. *Human Resource Management, 25*: 441-458.

DeGeus, A.P. (1988). Planning as learning. *Harvard Business Review*, (March-April): 70-74.

Dess, G.G., Ireland, R.D. & Hitt, M.A. (1990). Industry effects and strategic management research. *Journal of Management, 16*(1): 7-27.

Devanna, M.A. & Tichy, N. (1992). Creating the competitive organization of the 21st century: The boundaryless corporation. *Human Resource Management, 29*(4): 455-471.

Dimmick, D. & Murray, V.V. (1978). Correlates of substantive policy decisions in organizations: The case of human resource management. *Academy of Management Journal, 21*: 611-613.

Doz, Y. & Prahalad, C.K. (1986). Controlled variety: A challenge for human resource management in the MNC. *Human Resource Management, 25*(1): 55-71.

Egelhoff, W.G. (1982). Strategy and structure in multinational corporations: An information-processing approach. *Administrative Science Quarterly, 27*: 434-458.

Eisenhardt, K.M. (1985). Control: Organizational and economic approaches. *Management Science, 31*(2): 134-149.

Eisenhardt, K.M. & Bourgeois, L.J. III. (1988). Politics of strategic decision making in high velocity environments: Toward a mid-rang theory. *Academy of Management Journal, 31*: 737-770.

Galbraith, J. (1973). *Designing complex organizations*. Reading, MA: Addison-Wesley.

Gerhart, B. & Milkovich, G.T. (1990). Organizational differences in managerial compensation and financial performance. *Academy of Management Journal, 33*(4): 663-691.

Goold, M. & Quinn, J.J. (1990). The paradox of strategic goals. *Strategic Management Journal, 11*: 43-57.

Govindarajan, V. & Fisher, F. (1990). Strategy, control systems, and resource sharing: Effects on business-unit performance. *Academy of Management Journal, 33*(2): 259-285.

Gupta, A.K. & Govindarajan, V. (1984). Business unit strategy, managerial characteristics and business unit effectiveness at strategy implementation. *Academy of Management Journal, 27*: 25-41.

———. (1991). Knowledge flows and the structure of control with multinational corporations. *Academy of Management Review, 16*(4): 768-792.

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Guthrie, J.P. & Olian, J.D. (1991). Does context affect staffing decisions? The case of general managers. *Personnel Psychology, 44*(2): 263-292.
Harrington, H.J. (1987). *The improvement process: How America's leading companies improve quality.* New York: Free Press.
Hambrick, D.C. (1989). Guest editor's introduction: Putting top managers back in the strategy picture. *Strategic Management Journal, 10*: 5-15.
Hambrick, D.C. & D'Aveni, R.A. (1992). Top team deterioration as part of the downward spiral of large corporate bankruptcies. *Management Science, 38*(10): 1445-1466.
Hayes, R.H. & Abernathy, W.J. (1980). Managing our way to economic decline. *Harvard Business Review, 58*(4): 67-77.
Hill, C.W.L. & Hoskisson, R.E. (1987). Strategy and structure in multiproduct firms. *Academy of Management Review, 12*(3): 331-341.
Hitt, M.A., Hoskisson, R.E. & Ireland, R.D. (1990). Mergers and acquisitions and managerial commitment to innovation in M-form firms. *Strategic Management Journal, 11*: 29-47.
Hoskisson, R.E. & Hitt, M.A. (1988). Strategic control systems and relative R&D investment in large multiproduct firms. *Strategic Management Journal, 9*: 605-621.
Hofstede, G. (1978). The poverty of management control philosophy. *Academy of Management Review*: 450-461.
Hrebiniak, L.G. (1978). *Complex Organizations.* St. Paul: West Publishing.
Hrebiniak, L.G. & Joyce, W.F. (1986). The strategic importance of managing myopia. *Sloan Management Review*, (Fall): 5-14.
Jackson, S.E., Schuler, R.S. & Rivero, J.C. (1989). Organizational characteristics as predictors of personnel practices. *Personnel Psychology, 42*: 727-785.
Jaeger, A.M. & Baliga, B.R. (1985). Control systems and strategic adaptation: Lessons from the Japanese experience. *Strategic Management Journal, 6*: 115-134.
James, L.R., Demaree, R.G. & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology, 69*(1): 85-98.
James, L.R., Demaree, W.H. & Wolf, G. (1993). r_{wg}: An assessment of within-group interrater agreement. *Journal of Applied Psychology, 78*(2): 306-309.
Jensen, M.C. & Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*: 305-360.
Keats, B.W. (1988). The vertical construct validity of business economic performance measures. *Journal of Applied Behavioral Science, 24*(2): 151-160.
Keats, B.W. & Hitt, M.A. (1988). A causal model of linkages among environmental dimensions, macro organizational characteristics, and performance. *Academy of Management Journal, 31*(3): 570-598.
Kerr, J.L. (1985). Diversification strategies and managerial rewards: An empirical study. *Academy of Management Journal, 28*: 155-179.
Khandwalla, P.N. (1973). Effect of competition on the structure of top management control. *Academy of Management Journal, 16*: 285-295.
Kimberly, J.R. (1976). Organizational size and the structuralist perspective: A review, critique, and proposal. *Administrative Science Quarterly, 21*: 571-597.
Knowlton, W.A. & Mitchell, T.R. (1980). Effects of causal attributions on a supervisor's evaluation of subordinate performance. *Journal of Applied Psychology, 65*: 459-466.
Kotter, J.P. (1982). *The general managers.* New York: Free Press.
Lawler, E.E. III. & Rhode, J.G. (1976). *Information and control in organizations.* Pacific Palasades, CA: Goodyear.
Lorsch, J.W. & Allen, A. (1973). *Managing diversity and interdependence: An organizational study of multi-dimensional firms.* Boston: Division of Research, Harvard Business School.
Mahoney, T.A. & Deckop, J.R. (1986). Evolution of concept and practice in personnel administration/human resource management. *Journal of Management, 12*(2): 223-241.
Majchrzak, A. (1988). *The human side of factory automation.* Reading, MA: Addison-Wesley.
March, J.G. & Simon, H.A. (1958). *Organizations.* New York: Wiley.
Merchant, K.A. (1985). *Control in business organizations.* Marshall, MA: Pitman.
Merton, R.K. (1957). Bureaucratic structure and personality. In Robert K. Merton (Ed.), *Social theory and social structure.* New York: Free Press.
Michael, D.N. (1973). *On learning to plan–and planning to learn.* San Francisco: Jossey-Bass.
Miles, R.E. & Snow, C.C. (1978). *Organizational strategy, structure, and process.* New York: McGraw-Hill.
Mitchell, T.R. & Wood R.E. (1980). Supervisors' responses to subordinate poor performance: A test of an attribution model. *Organizational Behavior and Human Performance, 25*: 123-128.
Murphy, K.J. (1985). Corporate performance and managerial remuneration, *Journal of Accounting and Economics, 7*: 11-42.

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Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, (November-December): 96-104.

Ouchi, W.G. (1977). The relationship between organizational structure and organizational control. *Administrative Science Quarterly, 20*: 95-113.

_____. (1978). The transmission of control through organizational hierarchy. *Administrative Science Quarterly, 21*: 173-192.

_____. (1979). A conceptual framework for the design of organizational control mechanisms. *Administrative Science Quarterly, 24*: 833-848.

Ouchi, W.G. & Maguire, M.A. (1975). Organization control: Two functions, *Administrative Science Quarterly, 20*: 559-569.

Pitts, R.A. (1976). Diversification strategies and organizational policies of large diversified firms. *Journal of Economics and Business, 28*(3): 181-188.

Platt, J. (1964). Strong inference. *Science, 146*: 347-353.

Prahalad, C.K. (1983). Developing strategic capability: An agenda for top management. *Human Resource Management, 22*: 237-254.

Pucik, V. (1988). Strategic alliances, organizational learning, and competitive advantage: The HRM agenda. *Human Resource Management, 27*: 77-94.

Rappaport, A. (1978). Executive incentives vs. corporate growth. *Harvard Business Review, 56*(3): 28-46.

Reich, R.B. (1990). Who is us? *Harvard Business Review*, (January-February): 53-64.

Russell, J.S., Terborg, J.R. & Powers, M.L. (1985). Organizational performance and organizational level training and support. *Personnel Psychology, 38*: 849-863.

Senge, P.M. (1993). Transforming the practice of management. *Human Resource Management Quarterly, 4*(1): 5-31.

Schmalensee, R. (1977). Using the H-index of concentration with published data. *Review of Economics and Statistics, 59*: 186-213.

Schmidt, F.L., Hunter, J.E. & Pearlman, K. (1979). Assessing the economic impact of personnel programs on workforce productivity. *Personnel Psychology, 35*: 333-347.

Schmitt, N. & Schneider, B. (1984). Current issues in personnel selection. Pp. 85-125 in K.M. Rowland & G.R. Ferris (Eds.), *Research in personnel and human resource management*, Vol. 2. Greenwich, CT: JAI Press.

Schneider, B. (1987). The people make the place. *Personnel Psychology, 40*: 437-453.

Schonberger, R.J. (1986). *World class manufacturing: The lessons of simplicity applied.* New York: Free Press.

Schuler, R.S. (1989). Strategic human resource management and industrial relations. *Human Relations, 42*(2): 157-184.

Schuler, R.S. & Jackson, S.A. (1989). Determinants of human resource management priorities and implications for industrial relations. *Journal of Management, 15*: 89-99.

Schuster, J. (1984). *Management compensation in high technology companies.* Lexington, MA: Lexington Books.

Snell, S.A. (1992). Control theory in strategic human resource management: The mediating effect of administrative information. *Academy of Management Journal, 35*: 292-327.

Snell, S.A. & Dean, J.W. Jr. (1992). Integrated manufacturing and human resource management: A human capital perspective. *Academy of Management Journal, 35*: 467-504.

Snow, C.C. & Snell, S.A. (1993). Staffing as strategy. Pp. 448-478 in N. Schmitt & W.C. Borman (Eds.), *Personnel selection in organizations.* San Francisco: Jossey-Bass.

Staw, B.M., Sandelands, L.E. & Dutton, J.E. (1981). Threat-rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly, 26*: 501-524.

Stewart, T.A. (1990). Brainpower. *Fortune*, (June 3): 44-60.

Stone, E.F. & Hollenbeck, J.R. (1984). Some issues associated with moderated regression. *Organizational Behavior and Human Performance, 34*: 195-213.

_____. (1989). Clarifying some controversial issues surrounding procedures for detecting moderator variables: Empirical evidence and related matters. *Journal of Applied Psychology, 74*: 3-10.

Sutton, R.I. (1990). Organizational decline processes: A social psychological perspective. Pp. 205-253 in L.L. Cummings & B.M. Staw (Eds.), *Research in organizational behavior*, Vol. 12. Greenwich, CT: JAI Press.

Thomas, J.B. & McDaniel, R.R. (1990). Strategic issue interpretation: The effects of strategy and information processing structure of top management teams. *Academy of Management Journal, 33*(2): 286-306.

Thompson, J.D. (1967. *Organizations in action.* New York: McGraw-Hill.

Tosi, H.L. Jr. & Gomez-Mejia, L.R. (1989). The decoupling of CEO pay and performance: An agency theory perspective. *Administrative Science Quarterly, 34*: 169-189.

Downloaded from jom.sagepub.com at UNIV OF CALIFORNIA SANTA CRUZ on November 11, 2014

Tsui, A.S. (1990). A multiple-constituency model of effectiveness: An empirical examination at the human resource subunit level. *Administrative Science Quarterly, 35*: 458-483.

Turcotte, W.E. (1974). Control systems, performance and satisfaction in two state agencies. *Administrative Science Quarterly, 19*: 60-73.

Van de Ven, A.H., Delbecq, A.L. & Koenig, R. Jr. (1976). Determinants of coordination modes within organizations. *American Sociological Review, 41*: 322-338.

Venkatraman, N. & Ramanujam, V. (1986). Measurement of business performance in strategy research: A comparison of approaches. *Academy of Management Review, 11*(4): 801-814.

Weitzel, W. & Jonsson, E. (1989). Decline in organizations: A literature integration and extension. *Administrative Science Quarterly, 91*: 91-109.

Wright, P.W. & McMahan, G.C. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management, 18*(2): 295-320.

Zajack, E. (1990). CEO selection, succession, compensation, and firm performance: A theoretical integration and empirical analysis. *Strategic Management Journal, 11*: 217-230.

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