

The authors consider the relationships among two characteristics associated with senior marketing positions (procedural knowledge and performance documentation), four types of management controls, and three job-related minipathologies (job tension, dysfunctional behaviors, and information asymmetries between superiors and subordinates). Selected management control theory suggests that the characteristics of a given marketing position should predict managers' reliance on specific types of management controls. In turn, these controls should directly predict the extent of job-related minipathologies. In contrast, contingency theories of control suggest that task characteristics moderate the direct effects of controls on these negative outcomes. In effect, they argue that whether outcomes are positive or negative depends on the extent to which controls "fit" a given marketing position. To test these ideas, a national survey of senior marketing personnel was conducted. Three sets of findings emerged. First, the two task characteristics studied generally predict the type of controls-in-use. Second, certain controls-in-use have a modest effect on specific minipathologies. Third, the moderating effect of task characteristics is not confirmed. Implications for marketing practice and directions for future research in marketing are proposed.

Marketing Jobs and Management Controls: Toward a Framework

Marketing control is defined as a set of activities designed to increase the probability that specified plans are implemented properly and desired outcomes are achieved (Jaworski 1988). Though it is widely accepted that marketing involves a series of activities, from planning to implementation to control (Kotler 1988), most of the literature has centered on the planning aspects of marketing rather than such issues as the implementation of marketing programs (Bonoma 1985) or the control of marketing personnel (Anderson and Chambers 1985; Anderson and Oliver 1987; Jaworski 1988). However, even if "front-end" activities are well formulated, their expected benefits can be offset easily by poor imple-

mentation and control. Greater understanding of control issues in marketing therefore is an important research priority. We report one of the first attempts to examine empirically the antecedents and consequences of various controls-in-use in a marketing context. Jaworski's (1988) recently developed framework for marketing control guided the research.

The purpose of our article is fourfold. First, building on Jaworski's (1988) work, we empirically examine the effects of several types of controls on marketing personnel. If control types do influence management and marketing outcomes, clear understanding of various types of controls is necessary (Merchant 1988). However, rather than examining one type of control in isolation, we examine for the first time the *simultaneous* existence of several types of controls (see conceptual work of Anthony 1952, Hopwood 1974, and Lawler and Rhode 1976, among others).

Second, we examine the role of context in shaping the development of controls. Jaworski (1988) hypothesized that controls-in-use are predicted by several environmental contexts: the macro environment, the operating

*Bernard J. Jaworski and Deborah J. MacInnis are Assistant Professors of Marketing, University of Arizona.

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environment, and the internal environment. Our study is one of the first to examine empirically the effects of aspects associated with the internal marketing context (see also Anderson 1985), namely task characteristics, on the use of various marketing controls.

Third, our study empirically examines the effects of controls-in-use on three "minipathologies": job tension, dysfunctional behavior, and information asymmetry between superiors and subordinates. Though controls are implemented to produce positive outcomes for management, negative consequences also may arise from controls-in-use (see Phillips 1982). For example, a product manager whose performance evaluation is based primarily on output such as market share may find it personally advantageous to manipulate the reporting of market boundaries (Day 1977), to work primarily on increasing share while ignoring other activities, to withhold information from management, or to provide only positive (or negative) accounts of various activities to superiors (see Lawler and Rhode 1976 for a review). Little is currently known about when controls produce such negative outcomes.

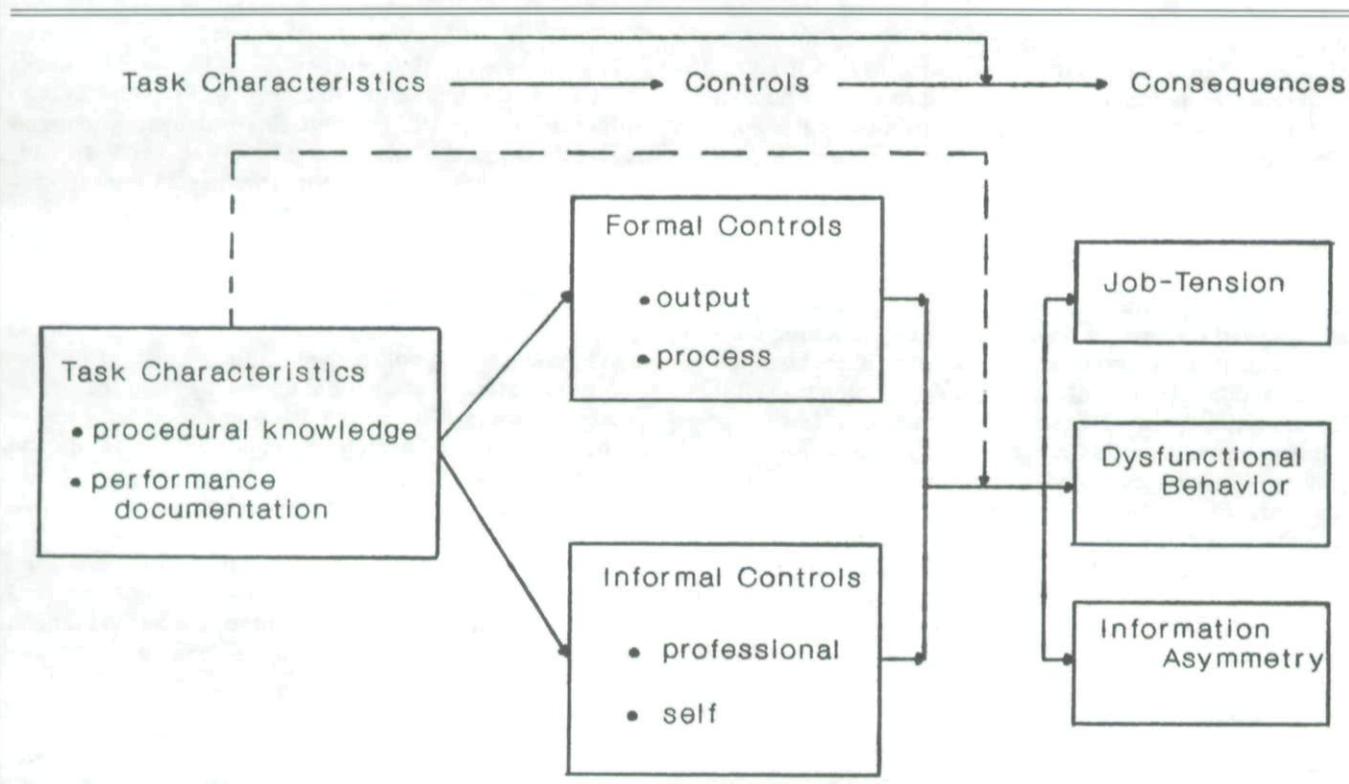
A final purpose of our study is to examine whether the direct effects of controls on negative outcomes are moderated by task characteristics. Though certain con-

trols may increase negative outcomes in one job context, they may reduce negative consequences in another job context. This perspective is termed a contingency approach because the effectiveness of various controls is viewed as contingent upon the context in which they are used (see Jaworski 1988; Merchant and Simons 1985). Our study is the first to test directly the contingency model of control proposed by Ouchi (1979) and Thompson (1967) and implied in the work of others (e.g., Anthony 1952; March and Simon 1958; Perrow 1970). We present these ideas systematically in the following three sections. First, we articulate the proposed model and research propositions. We then describe the results of our empirical investigation. Finally, we discuss the implications of the results.

PROPOSED MODEL AND RESEARCH PROPOSITIONS

We develop seven propositions based on the conceptual framework in Figure 1. The propositions sequentially consider the relationship between task characteristics and controls, controls and consequences, and the selected moderator effects of task characteristics on the control-consequence relationship.

Figure 1
TASK CHARACTERISTICS, CONTROLS, AND CONSEQUENCES^a



^aDotted line denotes that a selected set of moderator effects is expected to emerge.

Relationship Between Task Characteristics and Controls

Task characteristics. We examine whether elements associated with the internal environment, namely the characteristics of the task being performed by marketing personnel, affect the use of specific types of marketing controls. Task characteristics refer to various dimensions, descriptors, or attributes of a particular position within the organization. Two primary characteristics examined here are procedural knowledge (Ouchi 1979; Thompson 1967) and the availability of documentation about job performance (Ouchi 1978, 1979).

Procedural knowledge refers to the degree to which managers can specify clearly the activities an individual must perform to achieve a desired outcome (Ouchi 1979; Thompson 1967). Such knowledge is likely to be most clear in situations in which the relevant task is highly routinized. For example, salespersons may have developed clear scripts for sales performance (Leigh and McGraw 1989; Weitz, Sujan, and Sujan 1986) and may be able to articulate these action scripts to new salespersons. In contrast, a marketing director who asks a subordinate to develop a new environmental scanning system may have little knowledge of what the marketing employee needs to do to develop such a system. Procedural knowledge is likely to vary from position to position, task to task, and firm to firm (Peterson 1984).

Performance documentation reflects the extent to which marketing superiors have available forms of documentation to assess a marketing employee's performance (similar in spirit to Ouchi's "measurability" variable). Such documentation is expected to be most prevalent in situations in which the firm can easily assess the contributions of individual workers. Thus, performance documentation is more likely to be evident for low level marketing research positions than for senior market planners (cf. Ouchi 1979).

Types of controls. Both procedural knowledge and performance documentation are hypothesized to predict the extent of reliance on various types of marketing controls. The types of controls we examine are illustrated in the middle section of Figure 1. As Merchant (1988) notes, controls can be described by their degree of formality. Formal controls are written, management-initiated mechanisms designed to influence the probability that marketing personnel will behave in ways that support the stated marketing objectives. Informal controls are unwritten, typically worker-initiated mechanisms designed to influence the behavior of marketing personnel. As Jaworski (1988) notes, these informal controls may or may not be consistent with the stated marketing objectives. Most contemporary control frameworks propose that *both* formal and informal controls operate in a given organization (e.g., Ansari 1977; Anthony 1952; Dalton 1971; Flamholtz, Das, and Tsui 1985; Hopwood 1974; Merchant 1985a; Ouchi 1979; among others). However, empirical evidence for this notion is limited.

Two types of formal controls termed "process" and "output" controls are examined here. What differentiates these controls is the timing of management intervention. Process controls are exercised when managers attempt to influence how a given job is performed. It therefore centers on evaluating an individual in terms of the means, behavior, or activities that are thought to lead to a given outcome (Ouchi 1979). For example, process controls are used if a salesperson is evaluated in terms of the number of calls made rather than sales themselves. Output controls, in contrast, are exercised when a given individual is evaluated in terms of the results of his or her behavior relative to set standards of performance (Merchant 1985a). If the salesperson is evaluated in terms of the number of units of the product sold relative to a specified sales quota, an output control mechanism is in place. Note that these two types of controls are not necessarily opposing; both, neither, or only one may be implemented in a given situation.

At least two types of informal controls, professional and self, also have been identified (see Jaworski 1988). These two types of controls are differentiated on the basis of who does the "evaluation." Professional controls are operative when peers within one's work unit engage in collegial interaction, discussion, and informal evaluations of a colleague's work (Becker and Gordon 1966; Cyert and March 1963; Peterson 1984; Waterhouse and Tiessen 1978).¹ Self controls are operative when the individual shows commitment and willingness to take responsibility for his or her job (see Dalton 1971; Thomas 1983).

Task characteristics and controls. The specific tasks required of the marketing manager are hypothesized to influence the types of controls the organization emphasizes (cf. Dornbush and Scott 1975; Van De Ven, Delbecq, and Koenig 1976). When managers can specify clearly the transformation process for a given activity/position, rules and procedures are likely to be developed to monitor one's performance in that position (March and Simon 1958; Ouchi 1979; Peterson 1984; Thompson 1967). Thus, assuming a rational form of organizational development, we would expect a linear relationship between the extent of procedural knowledge and the use of process controls. This relationship has received support in the management literature (Eisenhardt 1985; Ouchi and Maguire 1975).

In addition, we hypothesize that procedural knowledge also affects the relative use of professional and self controls. To the extent that the task is routinized and managers can specify the activities that must be performed to produce a desired outcome, the individual can rely less on peers for job-related discussions or apprais-

¹Though this study examines the extent to which professional controls are positive (by encouraging cooperation, job-related discussions, and mutual respect) we recognize that peers can also foster a negative work spirit that can adversely affect performance.

als of his or her work. Indeed, for these types of positions the firm may actively discourage fraternization. Furthermore, if the task is mechanized, we would expect the individual to assume less responsibility for the work produced. This reasoning leads to the first hypothesis.

H₁: The greater the procedural knowledge, (a) the greater the tendency of the firm to rely on process controls and (b) the less the tendency of the firm to rely on professional or self controls.

Similar logic applies to the development of output control systems. If the organization has documented methods to assess the individual's performance, a concrete method to control the individual's output can be implemented. Put simply, if the superior can develop specific and accurate measures of a salesperson's or marketing professional's performance, the superior is likely to use those documents to evaluate the effectiveness of the subordinate's work. Hence, we expect that as the ability to document or assess individual performance increases, managers will be more likely to use output control systems (Anderson 1985; Anderson and Chambers 1985; Anderson and Oliver 1987; Ouchi and Maguire 1975; Peterson 1984).

If performance documents are available, we also expect the use of professional controls to increase. Assuming the firm can develop documents specifying desired performance, we anticipate that marketing personnel will engage in activities that increase the likelihood of attaining relevant goals. These actions include interaction, communication, and feedback from other marketing professionals. Also, the firm may develop methods to encourage this interaction. Finally, given that the organization has the ability to assess performance, we also expect the manager to assume greater responsibility for work produced. Hence self controls should be higher, particularly if the standards are reasonable and the marketing manager has participated in goal setting (Lawler and Rhode 1976).

H₂: The greater the availability of performance documentation, the greater the tendency to rely on (a) output control, (b) professional controls, and (c) self controls.

Controls and Consequences

Job tension. Controls-in-use can have direct effects on the psychological and behavioral responses of marketing personnel. Indeed, the main body of research on marketing control reflects the assumption that a tight set of formal controls will increase the probability that the manager will engage in the desired process and/or achieve the desired outcome (Hulbert and Toy 1977; Sharma and Achabal 1982; Wilson 1980). In addition, classic work in organizations and sociology suggests that informal controls may have a powerful, lasting effect on the responses of workers (e.g., Barnard 1938; Roethlisberger and Dickson 1939; Whyte 1955). Less work has ad-

ressed the negative consequences of controls-in-use. In this section, we consider the direct effects of the four controls on three minipathologies (job tension, dysfunctional behavior, and information asymmetry; see Figure 1).

Job tension reflects the extent to which the job, job evaluations, and the achievement of performance goals cause individual-level stress. Several investigations of the relationship between formal controls and job tension have shown that strict output control systems (i.e., budgetary measures of performance) are associated with increased job tension (Argyris 1953; Newman 1975; Swieringa and Moncur 1972; however, see Otley 1978). Generalizing to a marketing context, we expect that increased reliance on output assessments will lead to higher levels of job tension.

In contrast to output controls, we expect increased use of process controls to reduce job tension. In this case, managers are dictating the nature of the tasks to be performed and how they would be performed. In so doing, managers are reducing role stress and tension (see Fisher and Gitelson's 1983 meta-analysis of formalization and role consequences). A similar link between process controls and positive psychological consequences has been postulated in the sales area (Anderson and Oliver 1987). We therefore predict that:

H_{3a}: The greater the reliance on output control, the greater the job tension.

H_{3b}: The greater the reliance on process control, the less the job tension.

Dysfunctional behaviors. Though the basic purpose of the management control system is to provide timely feedback that can enhance employee performance, certain dysfunctional behaviors may result from the control system-in-use (Anderson, Chambers, and Dunlap 1986; Chow, Cooper, and Waller 1988; Dearden 1960; Lawler 1976; Lawler and Rhode 1976; Porter, Lawler, and Hackman 1975). In this section we briefly review four dysfunctional consequences that can be tied to control systems (Lawler and Rhode 1976; Porter, Lawler, and Hackman 1975). Rigid bureaucratic behavior or "gaming" refers to situations in which employees behave in ways that appear to be beneficial to the organization as assessed by the control system, but are dysfunctional for the firm in the long run (Birnberg, Turopolec, and Young 1983; Lawler 1976; Lawler and Rhode 1976; Merton 1940). For example, a salesperson who focuses attention primarily on volume or units sold but ignores long-term customer relationships is "gaming" the management control system.

Several types of data manipulations including "smoothing" and "focusing" also can result from controls-in-use (Birnberg, Turopolec, and Young 1983; Lawler and Rhode 1976). Smoothing occurs when a manager attempts to "even out" a given information flow (e.g., sales figures, costs, supply of market research information) to make the resultant figures appear more

consistent over time. Focusing occurs when marketing personnel choose to enhance or degrade selected information so it is perceived more positively. For example, a marketing executive who is new product champion may not disclose certain findings or methodological flaws to the management team.

Finally, marketing personnel may deliberately engage in "inaccurate reporting" (Birnberg, Turopolec, and Young 1983; Hofstede 1967; Lawler 1976; Lawler and Rhode 1976; Markus and Pfeffer 1983; Merchant 1985b; Ridgeway 1956; Wildavsky 1964; Williamson 1970). For example, a marketing research director may overestimate the cost of various research endeavors, knowing that a sizable cut would still allow the unit to complete the project. At the extreme, marketing personnel may feed invalid data into an MIS or DSS system rather than admit it does not exist (Argyris 1971) or may complete false expense forms (see Phillips 1982).

Evidence linking formal controls to these dysfunctional behaviors is mixed. Merchant's (1985b) field investigation showed that output controls increased dysfunctional behavior. However, Phillips' (1982) results indicated that both output control and process control (i.e., formalization) reduced dysfunctional behavior. Hence, we are hesitant to hypothesize direct effects for formal controls on dysfunctional behavior (cf. Hirst 1981, 1983).²

We do expect, however, that professional controls are related negatively to dysfunctional behavior. Marketing personnel are likely to have less incentive to engage in behaviors such as smoothing and focusing when the control system fosters cooperation, mutual respect, and job-related discussions. Moreover, the shared sense of purpose characteristic of professional controls (Anthony 1952; Dalton 1971; Hopwood 1974; Ouchi 1979) suggests that individuals are likely to look beyond the personal evaluation system to evaluate what is appropriate for the organization.

Similar logic applies to self-control. Recall that self-control is defined as the individual's taking responsibility for work produced. Commonly the individual who exercises high self control (i.e., intrinsic motivation) to complete tasks is also meeting the goals of the organization. Consequently, self-control measures are tied to higher quality and quantity of work produced (Oldham 1976) and job satisfaction (Wall, Clegg, and Jackson 1978). Though no work has examined the relationship between self-control and dysfunctional behaviors, the preponderance of evidence suggests that self-control generally leads to positive psychological and behavioral

²These apparently contradictory findings can be reconciled if one begins with the premise that dysfunctional behavior is not necessarily a result of formal controls (Lawler and Rhode 1976, p. 95). Rather, the characteristics of the control system—its completeness, perceived accuracy, links to rewards—have an important moderating role in shaping the effects of formal controls on behavior (Lawler and Rhode 1976).

outcomes.³ Therefore we predict:

- H_{4a}: The greater the professional controls, the less the dysfunctional behavior.
 H_{4b}: The greater the self-control, the less the dysfunctional behavior.

Information asymmetries. Information asymmetry, defined here as information possessed by the subordinate but not by the superior,⁴ is a frequent occurrence in organizations (Arrow 1974; Williamson 1975). The problem is not simply that the subordinate has a knowledge advantage, but that he or she may use the information opportunistically (Williamson 1975).

Formal controls, by their nature, serve to reduce information or knowledge asymmetries between superiors and subordinates. As Lawler and Rhode (1976, p. 3) note:

. . . information and control systems are instituted in organizations because management and others feel they need information about what is going on in the organization so they can coordinate the activities of others. . . .

Thus, a basic assumption underlying the use of formal controls is that more information will be obtained about the subordinate's actions and results. For example, in a sales context, standard new market development procedures, sales/expense ratios, field reports, and performance goals all serve to inform the superior of the subordinate's actions and results. Hence, almost by definition, properly designed formal controls should keep the superior more informed about the desired results and the means used to achieve those ends. This reasoning leads to the following hypothesis.

- H_{5a}: The greater the use of output controls, the less the information asymmetry.
 H_{5b}: The greater the use of process controls, the less the information asymmetry.

Contingency Hypotheses

Having examined the direct effects of controls on negative outcomes, we now consider whether controls interact with or are contingent upon the context in which they are used (Jaworski 1988; Merchant and Simons 1985). In the tradition of Thompson (1967), Ouchi (1979), Birnberg, Turopolec, and Young (1983), and others, we expect two general contingency or interaction effects. Because this general line of "fit" reasoning applies to

³This is not to say that informal controls always produce behaviors and responses in the best interest of the organization. Indeed, informal controls may lead workers to create slack, slow production, and feed invalid data into the control system. However, the type of informal controls conceived by Ouchi (1979) and Thompson (1967) and investigated in our study are more consistent with a system that assumes goal congruity between the individual and the organization.

⁴Naturally, asymmetries may also be in the other direction, such that the superior has more information than the subordinate. Such asymmetries are not investigated here.

each of the three negative outcomes, we discuss only the dysfunctional behavior variable.

First, output controls should have the most negative outcomes when performance documentation is low. If the firm does not have adequate documentation, benchmarks, or "measurement" instruments for performance yet insists on a quantitative assessment of individual productivity, the output produced by employees will only partially reflect the set of activities that must be performed (Anderson and Chambers 1985). Because the marketing manager is monitored by a control system that imperfectly monitors his or her performance, yet is rewarded on the basis of this partial, noncomprehensive system, we hypothesize that the manager will engage in acts that make him or her look favorable in terms of the partial system of control (see Anthony 1952; Argyris 1953; Ridgeway 1956; Roethlisberger and Dickson 1939; Whyte 1955). Relatedly, we expect that process controls are least effective when procedural knowledge is low. When procedures are implemented without an adequate understanding of the process, we expect the dysfunctional behavior of managers to increase.

H₆: Output controls are more likely to increase job tension, dysfunctional behavior, and information asymmetry when performance documentation is low than when performance documentation is high.

H₇: Process controls are more likely to increase job tension, dysfunctional behavior, and information asymmetry when procedural knowledge is low than when procedural knowledge is high.

METHOD

Data Collection

After discussions with academic colleagues and a search of relevant literatures, we developed an instrument to assess the constructs identified in Figure 1. This instrument was evaluated initially by interviewing marketing managers. In each interview, the manager was asked to fill out the questionnaire in the presence of one of the researchers and raise questions as problems or ambiguities arose. After each interview a new questionnaire was drafted professionally and a different marketing manager was chosen randomly from the local AMA roster. After 10 interviews no additional problems or ambiguities with the instrument were found. A pretest then was conducted among marketing managers ($N = 90$) in a large eastern city. The pretest was designed to assess the psychometric properties of the scales and to test several novel techniques designed to enhance response rates.

After the pretest, a refined survey was mailed to a national sample ($N = 500$) of senior marketing executives (i.e., marketing managers, directors of marketing, vice-presidents) drawn randomly from a recent AMA roster. The first survey packet included a typed personalized letter, a handwritten note thanking the respondent, a new dollar bill, a business reply envelope, and an in-

dividually typed address label. The followup consisted of a postcard reminder and a handwritten thank-you note. The third mailing was similar to the first but the dollar was not included. Extreme care was taken to professionalize and personalize each contact with the respondent.

Of the 500 executives, 21 were excluded from the final response calculation (i.e., "return to sender" or "no longer with firm" responses), leaving a base of 479 potential respondents. Of these, 379 responded for a final response rate of 79.1%, which compares very favorably with previous response rates for marketing executives selected randomly from publicly available mailing lists. Table 1 reports the positions held by these marketing executives.

A close examination of the sample of executives reveals that the sample distribution is highly skewed toward nonroutine, nonprogrammatic, and highly interdependent marketing positions. For example, 42.6% responded that it would take a *qualified* person "more than a year" to learn their job. For the percentage of time spent carrying out routine tasks (i.e., tasks that are repetitive and require little judgment), the modal response was 10%. Furthermore, 60% responded that their performance depended either a great deal or totally on the performance of one or more groups in their organization.

Finally, it is important to stress that our research elicited *perceptions* of task characteristics, controls, and consequences. This sampling choice was motivated by our decision to collect very sensitive information held only by the subordinate—job tension, dysfunctional behavior, and ratings of knowledge. In addition, as we were attempting to model managerial behavior, previous work had suggested that it may be more appropriate to focus on perceived rather than actual situations (Weick 1969).

Measurement

Task characteristics. Two task characteristics were assessed: performance documentation and procedural knowledge. The performance documentation construct is closely related to Ouchi's (1979) measurement concept. The two items ($r = .77$) used to measure this concept are in the Appendix and relevant scale statistics are reported in Table 2. Procedural knowledge is similar to Ouchi's transformation process variable and Thomp-

Table 1
MARKETING POSITIONS HELD BY SAMPLE RESPONDENTS

Position	% ($N = 358$)
Vice president marketing	16.2
Director of marketing	20.0
Marketing manager	45.1
Brand/product manager	8.4
Other	10.3
	100.0

Table 2
RELIABILITY COEFFICIENTS FOR SCALES

	Number of items	Actual range	Mean	S.D.	α reliability
Procedural knowledge	2	2-10	4.57	1.73	.50 ^a
Performance documentation	2	2-10	4.89	2.12	.76 ^a
Output control	5	5-25	17.36	4.88	.88
Process control	4	4-20	10.19	3.49	.82
Professional control	5	5-25	17.84	4.62	.89
Self control	3	3-15	11.66	2.02	.60
Job tension	3	4-15	9.61	2.19	.60
Dysfunctional behavior	6	6-28	14.35	3.83	.75
Information asymmetry ^b	7	19-63	43.35	7.01	.90

^aPearson correlation.

^bFive points were added to each of the first seven items of the information asymmetry scale to ensure that the range for each difference score was positive (i.e., each item could range from 1 to 9).

son's (1967) beliefs about cause-effect relations. The two items ($r = .50$) used to assess the construct are in the Appendix and relevant data on the measure are reported in Table 2.

Controls-in-Use. Any system of control contains, either implicitly or explicitly, standards, monitoring procedures, and corrective action(s) when deviations arise (Dalton 1971). This is true of both formal and informal controls. An output control system comprises output standards (i.e., specific performance goals), variance assessments, and control actions when "significant" deviations are uncovered. A 5-item scale was designed to measure this concept ($\alpha = .88$). A process control system comprises rules, regulations, steps, and/or procedures to accomplish a given task. A 4-item scale was used to assess this construct ($\alpha = .82$). Both scales are in the Appendix.

Two informal controls were assessed. The first, termed "professional" control, corresponds to the conceptual work of Waterhouse and Tiessen (1978) and Becker and Gordon (1966). It is designed to assess the degree of collegial interaction, feedback, and evaluation. The 5-item measure ($\alpha = .89$) is in the Appendix. The second informal control, self control, coincides with the work of Dalton (1971), Hopwood (1974), Lawler (1976), Miner (1975), and Kerr and Slocum (1981). The focus in our research was on the extent to which the individual assumes responsibility for job activities. The 3-item measure ($\alpha = .60$) is in the Appendix.

Consequences. Three dependent variables were assessed. Job tension is a 3-item scale designed to assess tensions or pressures arising from job requirements and evaluations. Attention was primarily on job stress as it relates to performance evaluations ($\alpha = .59$).

The dysfunctional behavior measure is a combination of six items that tap a wide variety of dysfunctional responses including gaming, focusing, smoothing, and invalid reporting. Gaming reflects the extent to which employees behave in a way that looks good in terms of control system measures but is dysfunctional for the firm

(items 1 and 2). Smoothing refers to managers' "evening out" performance information to appear more consistent (item 3). Invalid reporting refers to the manipulation or falsification of marketing data (item 4). Finally, focusing occurs when certain aspects of information are enhanced or degraded to make the general picture appear more favorable (items 5 and 6). Overall, the composite index is shown to be reliable ($\alpha = .75$).

Information asymmetry is a constructed index designed to assess the extent to which the respondent perceives a knowledge advantage in relation to his or her superior. First, the respondent was asked to rate seven items related to job knowledge/information. Next, the respondent was asked to rate his or her immediate superior on these same seven items. The second score was subtracted from the first to form seven difference scores. The items used to construct the index are listed in the Appendix ($\alpha = .90$). Relevant scale statistics are reported in Table 2.

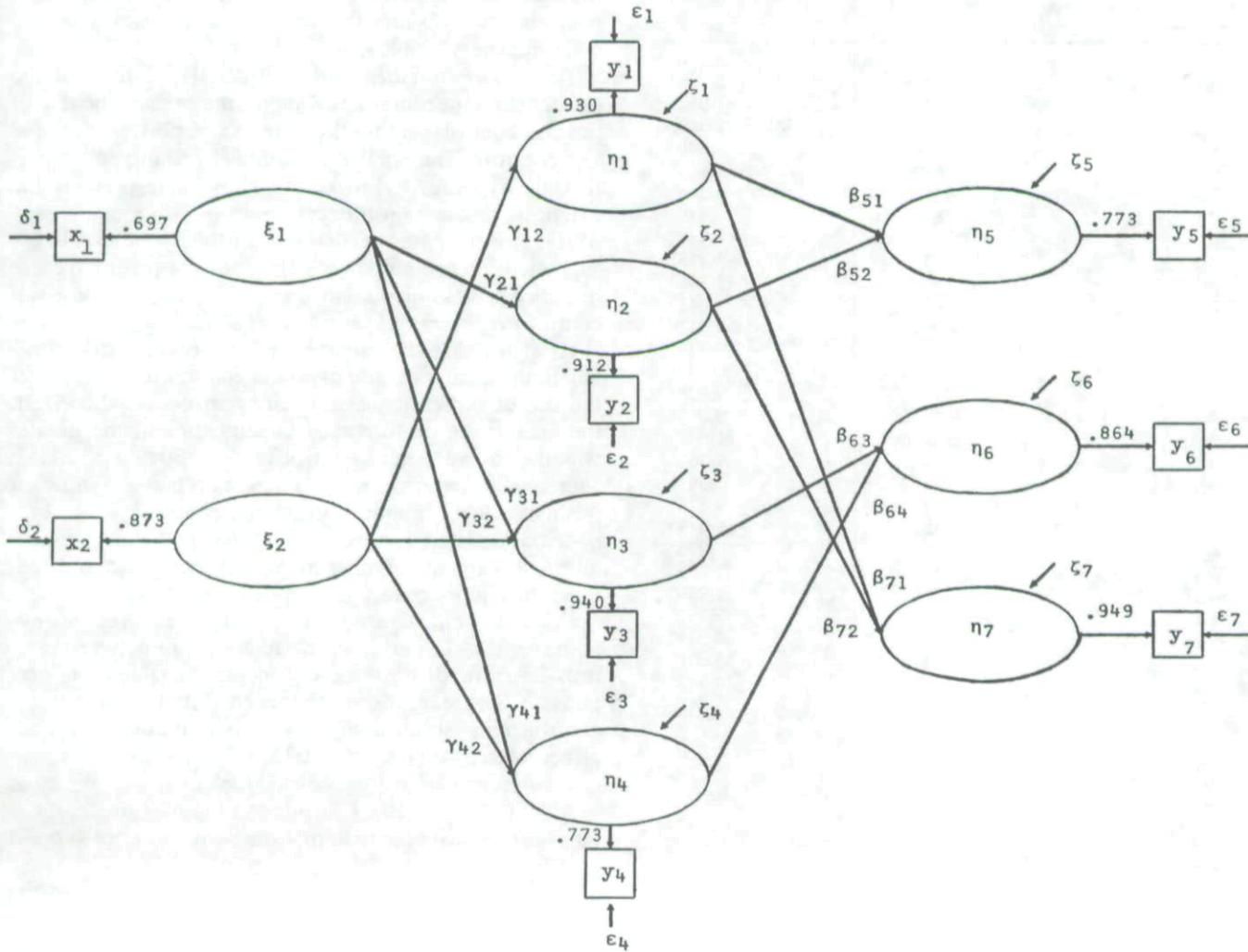
RESULTS

Main Effects Model

The hypothesized direct links between task characteristics, controls, and consequences were tested by using conventional maximum likelihood estimation techniques (Jöreskog and Sörbom 1983). As Figure 2 denotes, the model specifies that procedural knowledge (ξ_1) and performance documentation (ξ_2) predict four endogenous controls: output control (η_1), process control (η_2), professional control (η_3), and self control (η_4). These control constructs, in turn, are hypothesized to predict the extent of job tension (η_5), dysfunctional behavior (η_6), and information asymmetry (η_7).

Recently, Merchant (1988) proposed that the entire system of control can be viewed on a "formality" continuum. Because the LISREL program does not explicitly allow for correlations between endogenous constructs, we modeled this higher order conceptualization by correlating the structural errors associated with the

Figure 2
OPERATIONALIZATION OF CAUSAL MODEL



ξ_1 = procedural knowledge
 ξ_2 = performance documentation
 η_1 = output control
 η_2 = process control
 η_3 = professional control

η_4 = self control
 η_5 = job tension
 η_6 = dysfunctional behavior
 η_7 = information asymmetry

controls (i.e., ψ , the matrix related to controls).⁵ In addition to modeling this higher order relationship between controls, we allowed for the interrelationship between

⁵However, as one reviewer noted, this approach introduces an interpretational problem. One cannot make any statements about the importance of one path over the other. In the worst-case scenario, conclusive statements about which hypothesis is accepted and which is rejected cannot be made because it is very possible that with another sample one may arrive at a different conclusion. The problem is similar to the multicollinearity problem in regression analysis and related techniques.

two of the criterion constructs. Specifically, as job tension increases, the individual may seek relief by engaging in dysfunctional behavior (Hirst 1981; Hopwood 1973). However, because the direction of this causal relationship is open to speculation, we likewise accounted for this association by intercorrelating their respective structural errors (i.e., ψ_{65}). Though this model provides a means of relating endogenous constructs, this approach may also reflect variance due to common methods. Hence, the resulting intercorrelations must be interpreted with caution.

With a correlation matrix as input (see Appendix Ta-

Table 3
STRUCTURAL EQUATION MODEL ESTIMATES

Parameter	Standardized estimate	t-value
γ_{12}	.501	8.346 ^a
γ_{21}	.418	5.286 ^a
γ_{31}	-.121	-1.052
γ_{32}	.242	2.389 ^b
γ_{41}	-.151	-1.040
γ_{42}	.268	2.123 ^b
β_{51}	-.035	-.366
β_{52}	.181	1.818
β_{63}	-.115	-1.489
β_{64}	-.223	-2.418 ^b
β_{71}	-.164	-2.148 ^b
β_{72}	-.287	-3.643 ^a
θ_{11}	1.000	6.372 ^a
θ_{22}	1.000	9.730 ^a
θ_{21}	.599	6.435 ^a
ψ_{11}	.749	9.976 ^a
ψ_{22}	.825	9.059 ^a
ψ_{33}	.962	11.002 ^a
ψ_{44}	.954	7.318 ^a
ψ_{55}	.974	7.543 ^a
ψ_{66}	.915	9.118 ^a
ψ_{77}	.836	11.043 ^a
ψ_{21}	.456	7.275 ^a
ψ_{31}	.317	5.275 ^a
ψ_{32}	.278	4.250 ^a
ψ_{41}	.234	3.296 ^a
ψ_{42}	.200	2.544 ^b
ψ_{43}	.396	5.009 ^a
ψ_{65}	.374	4.522 ^a
λ'_1	.697	— ^c
λ'_2	.873	—
λ_1	.930	—
λ_2	.912	—
λ_3	.940	—
λ_4	.773	—
λ_5	.773	—
λ_6	.864	—
λ_7	.949	—

Model fit

χ^2 (d.f. = 16) = 26.91, $p < .043$, $N = 328$
GFI = .983, AGFI = .952, RMSR = .039

^a $p < .001$.

^b $p < .05$.

^c λ parameters constrained to be equal to $1 - \sqrt{\text{Reliability}}$.

ble), the comprehensive main effect model appears to fit the data exceptionally well (see Figure 2 and Table 3). The overall statistical support for the model appears to be very strong ($\chi^2(16) = 26.91$, $p < .043$; GFI = .983, AGFI = .952, RMSR = .039). The goodness of fit (GFI) and adjusted goodness of fit (AGFI) refer to the relative amount of variance and covariance jointly accounted for by the model. The root mean square residual (RMSR) is a measure of the average of the residual variances and covariances. The Q -plot, the low number of high normalized residuals (i.e., only one exceeds 2.0), the t -tests, and range of values (e.g., no negative variances) suggest that the model is acceptable.

Within the overall model, the estimates of the structural coefficients provide the basic tests of the proposed theory of controls. Following the conceptual model, we first address the links between task characteristics and controls, then discuss the effects of the controls on the consequence variables.

Task characteristics and controls. H_1 states that the greater the procedural knowledge, the greater the use of process controls and the less the use of professional and self controls. The empirical results afford mixed support for this hypothesis. Procedural knowledge predicts the extent of reliance on process controls ($\gamma_{21} = .418$, $p < .001$). However, the second half of the hypothesis is not supported; procedural knowledge does not predict the use of either professional control ($\gamma_{31} = -.121$, n.s.) or self control ($\gamma_{41} = -.151$, n.s.).

H_2 states that the greater the performance documentation, the greater the use of output controls and the greater the use of professional and self controls. As theorized, the greater the performance documentation, the greater was the use of output control ($\gamma_{12} = .501$, $p < .001$). Moreover, performance documentation had a significant positive effect on both professional control ($\gamma_{32} = .242$, $p < .05$) and self control ($\gamma_{42} = .268$, $p < .05$). In sum, all three paths are significant and in the expected direction, thus supporting H_2 .

Controls and consequences. The next set of hypotheses (H_3 – H_5) address the relationship between controls-in-use and the three dependent variables. H_3 pertains to the relationships between output and process controls and job tension. Though output control did not affect job tension ($\beta_{51} = -.035$, n.s.), the extent of process controls marginally predicted the amount of job stress ($\beta_{52} = .181$, $p < .10$). Considering the magnitude of the latter effect, we conclude that the results do not support H_3 .

H_{4a} states that the greater the professional controls, the less the dysfunctional behavior. The structural estimates do not support this hypothesis ($\beta_{63} = -.115$, n.s.). However, H_{4b} linking self control and dysfunctional behavior is supported ($\beta_{64} = -.223$, $p < .05$).

The final main effect hypothesis (H_5) posits that an increase in formal controls would reduce the information asymmetry between superiors and subordinates. The empirical results suggest that both output controls ($\beta_{71} = -.164$, $p < .01$) and process controls ($\beta_{72} = -.287$, $p < .001$) reduce asymmetries. Hence, the results support H_5 .

Contingency hypotheses. As the two contingency analyses were performed in much the same manner, we first review the general analysis strategy (see Jöreskog 1971; Jöreskog and Sörbom 1983; Sharma, Durand, and Gur-Arie 1981). The relevant moderator variable was split at the median and used to form two subgroups (e.g., high vs. low on performance documentation). Next, covariance matrices were generated for all the endogenous and exogenous variables for each subgroup. This matrix was generated independently for the high and low doc-

umentation subgroups. A LISREL group analysis then was performed in two stages. In the first stage, the relevant structural parameters were constrained to be invariant across groups. For example, we constrained the effect of output control on the three variables to be invariant in the low and high documentation subgroups. In the second stage, the structural parameters were not constrained to be equivalent across the subgroups. This analysis resulted in a $\Delta\chi^2$ test. A significant $\Delta\chi^2$ suggests that the structural parameters are significantly different across groups, thereby indicating that at least one of the moderating effects is significant. The results of the moderator analysis do not support H_6 or H_7 . Specifically, for both H_6 [$(\chi^2 = 113.55, 60 \text{ d.f.}) - (\chi^2 = 108.67, 57 \text{ d.f.}) = \Delta\chi^2 = 4.88, 3 \text{ d.f., n.s.}$] and H_7 [$(\chi^2 = 112.24, 60 \text{ d.f.}) - (\chi^2 = 106.42, 57 \text{ d.f.}) = \Delta\chi^2 = 5.82, 3 \text{ d.f., n.s.}$] the $\Delta\chi^2$ is not significant.

DISCUSSION

The purpose of our investigation was to consider the role of task characteristics in shaping both the development of control systems and their effects on marketing managers. Though conceptual (Anderson and Chambers 1985; Anderson and Oliver 1987) and empirical (Anderson 1985; Phillips 1982) work has begun to examine task characteristics-control linkages, the contingency model proposed by Ouchi (1979), Thompson (1967), March and Simon (1958), and others has not been examined in a marketing context. Because this theory directly challenges the dominant output orientation that anchors the discipline (see Jaworski 1988), greater study of the relative explanatory power of the traditional (main effect) and contingency (interaction) perspectives is warranted. Our study is one of the first in marketing to examine these divergent models empirically. Moreover, our study was designed to add to the control literature by identifying the negative effects of controls-in-use. In this section we review our basic findings, discuss their marketing implications, and provide directions for future research.

Task Characteristics and Controls

Overall, the task characteristics-control findings suggest that the characteristics of marketing positions do have a role in shaping the types of controls-in-use. These findings are both consistent with and extend those of prior research. The findings of strong, positive relationships between procedural knowledge and process controls and between performance documentation and output controls closely parallel the findings of Ouchi and Maguire (1975), Eisenhardt (1985), and Anderson (1985). Hypotheses about the effects of task characteristics on informal controls represent an extension of previous research. Though the findings do not support a process knowledge-informal control linkage, they reveal that performance documentation predicts the use of professional and self controls. Combined, the findings illustrate that one can obtain a richer understanding of the formal and informal con-

trols-in-use by examining characteristics of the marketing position.

Though our results support a task characteristic-control relationship, future research in marketing is needed to test the potentially dynamic or reciprocal relationships between task characteristics and controls-in-use. For example, as the marketing department accrues more experience and knowledge, modifications in the control system may occur. In turn, greater use of output controls may lead to greater procedural knowledge and performance documentation. Little is currently known about these reciprocal relationships, but such knowledge would provide important information on the triggers of control system change and how to manage control system change.

Factors in addition to task characteristics are likely to influence the controls-in-use. As Jaworski (1988) notes, competitive intensity, financial strength, and turbulence in the external environment also determine controls-in-use. Future research should examine the relative impact of these various environments on the development of controls-in-use.

Controls and Consequences

Results on the hypothesized direct effects of controls-in-use on job tension, dysfunctional behavior, and information asymmetry afford mixed support. Specifically, process and output controls do not predict the extent of job tension. However, self controls are associated with less dysfunctional behavior. Our study is the first to establish this relationship empirically. The notion that self controls reduce dysfunctional behavior raises the question of how managers can increase the likelihood that self controls will be initiated. Though our findings show that performance documentation may influence the development of self controls, additional research on conditions that foster a self-control system is warranted.

Our research also indicates that output and process controls are associated with less information asymmetry. This effect is the first empirical evidence that controls can reduce private information held by the subordinate. These findings suggest that formal controls in marketing can provide practical benefits—aside from their hypothesized link to performance.

Before strong management implications can be drawn from these results, future research on the mix of controls is needed. Specifically, though our study examined the effect of a single control on a given outcome variable, there is growing recognition that controls may combine to produce negative or positive synergy (Hopwood 1974). Future research should examine how combinations of controls affect the behavior of marketing personnel. This emphasis would represent a departure from theories that seem to suggest "one best" control given the organizational context (e.g., Ouchi 1979). Relatedly, Peterson's (1984) notion that certain controls may be "zoned" to certain areas warrants additional empirical investigation. Thus, a marketing manager may experience tight controls for certain tasks and loose controls for others. This

line of reasoning is intuitively appealing and is perhaps more reflective of the blend of routine and nonroutine tasks that confronts senior marketing managers.

Contingency Relationships

The results do not support the proposed contingency relationships. One interpretation of these findings is that the contingency theory is incorrect. This interpretation is provocative because the theory is both intuitive and leaves a reference trail dating back to the 1930s. Before abandoning the contingency explanation, however, we must consider alternative explanations for the lack of observed effects. First, other researchers have noted that finding moderating effects in field settings is extremely difficult (Sackett, Harris, and Orr 1986). Second, and more importantly, the fact that a high percentage of the sample defined their positions as nonroutine and non-programmable suggests significant homogeneity in those positions. Such homogeneity may have limited our ability to find contingency effects by limiting the variance of the sample on task characteristics. This lack of variance is surprising because no sampling restriction was placed on the type of senior-level position (i.e., sales communication, market research, strategic planning), industry, or extent of supervisory experience. Moreover, previous research on management controls provides evidence that variance on these dimensions could be expected for a given management position (Peterson 1984). Because the sample may not have provided adequate opportunity to find a contingency effect, future research on the contingency hypothesis using a more heterogeneous sample is needed. Future research should sample the extremes of marketing occupations, rather than just senior-level marketing managers.

Limitations

The limitations of our study provide some guidance for future research. First, improvement in measurement of key constructs is needed, particularly for task characteristics, job tension, and self control. As Fornell (1983) notes, when the number of indicators is less than four, the measurement properties of a given model could be problematic. Relatedly, additional task dimensions could be modeled—routine, analyzability, and measurability—to explore task characteristics fully as a moderator variable.

Second, as noted before, the focus of our research is perceptions of task characteristics, controls, and consequences. Previous work has suggested that in attempting to describe managerial behavior, it may be more appropriate to focus on perceived rather than actual situations (Weick 1969). Clearly, however, if one is to make normative recommendations, a focus on "actual" controls is necessary. This effort may take the form of intensive field investigations (Merchant 1988) or multiple-informant sampling (Phillips 1982).

APPENDIX MEASUREMENT OF CONSTRUCTS

Procedural Knowledge (5-point, strongly disagree–agree)

1. There exists a clearly defined body of knowledge or subject matter that can guide me in doing my work.
2. It is possible to rely upon existing procedures and practices to do my work.

Performance Documentation (5-point, strongly disagree–agree)

1. Documents exist to measure my performance after activities are complete.
2. My performance can be adequately assessed using existing documents.

Output Control (5-point, never–always)

1. Specific performance goals are established for my job.
2. My immediate boss monitors the extent to which I attain my performance goals.
3. If my performance goals were not met, I would be required to explain why.
4. I receive feedback from my immediate superior concerning the extent to which I achieve my goals.
5. My pay increases are based upon how my performance compares with my goals.

Process Control (5-point, never–always)

1. My immediate boss monitors the extent to which I follow established procedures.
2. My immediate boss evaluates the procedures I use to accomplish a given task.
3. My immediate boss modifies my procedures when desired results are not obtained.
4. I receive feedback on *how* I accomplish my performance goals.

Professional Control (5-point, strongly agree–disagree)

1. The division encourages cooperation between marketing professionals.
2. Most of the marketing professionals in my division are familiar with each other's productivity.
3. The division fosters an environment where marketing professionals respect each other's work.
4. The division encourages job-related discussions between marketing professionals.
5. Most marketing professionals in my division are able to provide accurate appraisals of each other's work.

Self Control (5-point, strongly disagree–agree)

1. The major satisfactions in my life come from my job.
2. The work I do on this job is very meaningful to me.
3. I feel that I should take credit or blame for the results of my work.

Job Tension (5-point, never–always)

1. I experience tension in my job.
2. I experience job tension during performance evaluations.
3. If I don't attain my performance goals, I feel tense.

Appendix Table
CORRELATION AND COVARIANCE MATRIX^a

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Procedural knowledge	1.69	1.286	.973	1.210	-.111	-.033	.031	.252	-2.094
(2) Performance documentation	.361	2.10	4.445	1.761	1.488	.580	-.316	-.055	-3.954
(3) Output control	.117	.432	4.90	8.350	8.191	2.480	.757	-.861	-9.866
(4) Process control	.208	.245	.497	3.42	3.994	1.117	.883	-.093	-7.806
(5) Professional control	-.014	.154	.364	.254	4.59	3.024	-.212	-3.370	-4.334
(6) Self control	-.009	.136	.248	.160	.323	2.03	.047	-1.509	-.414
(7) Job tension related to performance	.009	-.071	.073	.121	-.022	.011	2.12	2.098	-1.662
(8) Dysfunctional behavior	.038	-.007	-.045	-.007	-.190	-.192	.256	3.87	-.318
(9) Information asymmetry	-.176	-.269	-.287	-.325	-.135	-.029	-.112	-.012	7.01

^aCorrelations are below the diagonal, standard deviations are on the diagonal, and covariances are above the diagonal.

Dysfunctional Behavior (5-point, never-always)

1. I tend to ignore certain job-related activities simply because they are not monitored by the division.
2. I work on unimportant activities simply because they are evaluated by upper management.
3. Even if my productivity is inconsistent, I still try to make it appear consistent.
4. I have adjusted marketing data to make my performance appear more in line with division goals.
5. When presenting data to upper management, I try to emphasize data that reflects favorably upon me.
6. When presenting data to upper management, I try to avoid being the bearer of bad news.

Information Asymmetries (5-point, strongly disagree-agree)

1. I know how to accomplish the work I normally encounter.
2. I am intimately familiar with the day-to-day decisions related to my work.
3. I have developed an excellent working knowledge of my job.
4. I can quantitatively assess my performance soon after I complete my activities.
5. I am able to adequately assess my performance after I complete my activities.
6. I can specify the most important variables to monitor in my work.
7. I could specify performance objectives to cover the range of activities I perform.

The seven items below are subtracted from the corresponding items above to form seven "difference score" items.

1. My manager knows exactly how to accomplish the work I normally encounter.
2. My manager is intimately familiar with the day-to-day decisions related to my work.
3. My manager has developed an excellent working knowledge of my job.
4. My manager can quantitatively assess my performance soon after I complete my activities.
5. My manager is able to adequately assess my performance after I complete my activities.

6. My manager can specify the most important variables to monitor in my work.
7. My manager can specify performance objectives to cover the range of activities I perform.

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