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**THE CONTEXTUAL DETERMINANTS OF
INCREASED ADOPTION OF PARTICIPATIVE
PRACTICES IN ORGANIZATIONS**

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Abstract

Drawing on multiple frameworks, this study tested longitudinally on a matched set of 130 companies the contextual determinants of increased adoption of participative practices. It also investigated whether organizational and environmental characteristics mediate the adoption patterns for two different types of participative practices that differed in their level of complexity. Environmental decline, firm downsizing, profitability, industry type and cumulative levels of prior adoption were positively related to increase in overall participative practices. Firm profitability, industry type, and initial level of adoption were positively related to increased utilization of employee participation groups, while increase in level of professionalization, industry type, initial level of adoption, and downsizing were positively related to increased utilization of self-managing teams, and higher unionization was negatively related.

INTRODUCTION

Employee involvement is an increasingly popular topic in the management literature on organizational effectiveness. Many proponents argue that implementing employee involvement practices can provide a competitive advantage for organizations since it produces superior organizational performance (Cohen- Rosenthal and Burton, 1987; Levine, 1992; Dertouzos, Lester & Solow, 1989; Lawler, 1986; 1992). Employee involvement has been presented as a powerful strategy for 'work place transformation' and creating 'flexible specialization' competencies (Osterman, 1994), organizational restructuring in the face of environmental decline (Rosenblatt, Rogers & Nord, 1993), and as a way to enhance both first order and second order organizational learning and change (Mohrman & Cummings, 1989; Mohrman & Lawler, 1985). Other studies have extended empirical evidence to validate some of these claims. Ledford and Wright (1991) found that organizations that practiced employee involvement, consistently outperformed their industry averages in a variety of measures. In a recent study, Levine, Lawler, Ledford, and Mohrman (1993) showed that in general companies with more employee involvement had higher levels of self-reported performance and exhibited higher total factor productivity.

Not surprisingly, organizations are displaying increasing rates of adoption of employee involvement practices (Osterman, 1994; Cooke, 1988; Delaney, Lewin & Ichniowski, 1989; Commission on the skills of the American work force, 1990; Lawler, Ledford & Mohrman, 1989; Lawler, Mohrman & Ledford, 1992) . For example, Cooke (1988) examined adoption of employee involvement practices in a matched set of unionized and non-unionized small manufacturing firms. Prior to 1975 only 6.5 percent of the unionized firms had any form of employee involvement practices while they were virtually absent in the non-unionized establishments. During the 1980s, however, 92.9 percent of the unionized establishments and 83.9 percent of the non unionized firms practiced some form of employee involvement . Likewise, Lawler et al., (1989) in their

study of employee involvement practices in Fortune 1000 companies found that over 80 percent of the corporations that responded to their survey (N=476) used some form of employee involvement. However, in spite of the increasing adoption of employee involvement practices by organizations, systematic, longitudinal, empirical studies investigating the contextual drivers behind this rising utilization of employee involvement practices is limited at best.

The current research on employee involvement adoption behavior suffers from some major limitations. First, a number of studies that are frequently mentioned in relation to employee involvement are really studies investigating human resource practices in general, of which employee involvement may be one aspect (Delaney, Lewin & Ichniowski, 1989; Ichniowski, Shaw & Prennushi, 1993; Levine & Tyson, 1990; Kelley & Harrison, 1992). Second, the limited studies that have directly examined employee involvement practices (Eaton and Voos, 1992; Osterman, 1994) have not conceptually distinguished between various forms of employee involvement and have clustered them together. This has been the case although research has shown that innovation adoption patterns vary depending on characteristics of the innovation such as level of complexity (Teece, 1981; Damanpour & Evan, 1984; Rogers, 1983; Ledford, 1993; Zaltman, Duncan & Holbek, 1973), and further, characteristics of the innovation interact with the characteristics of the organization in determining innovation adoption patterns (Bolton, 1993; Hage & Aiken, 1970). Third, most of these studies examining employee involvement adoption have tended to use cross sectional designs, and static, synchronic predictors of adoption behavior (Ginsberg, 1988; Boeker & Goodstein, 1991).

This study had two major objectives. A first purpose was to examine longitudinally increasing utilization of participative practices (a subset of employee involvement practices) in organizations using both absolute (state variables) and dynamic (changes in state variables) predictors. Drawing on March's (1981) argument that organizational change is a complex interplay of multiple factors, this study relied on

explanations from several frameworks such as theories of organizational adaptation (Chandler, 1962); information processing (Galbraith, 1973); firm resources and capabilities (Cyert & March, 1963); technology and structure (Khandwalla, 1974); organizational power and politics (Lammers, 1975); professional cultures and structure (Miller, 1967); and institutional processes (Dimaggio & Powell, 1983; Meyer & Rowan, 1977) in identifying contextual determinants. A second purpose was to investigate whether environmental and organizational characteristics mediate the adoption patterns for two different types of participative practices, namely, employee participation groups and self managing teams that differed in their level of complexity.

Participative practices are power sharing practices that allow employees to make "decisions about how work will be done, who will do it, at what quality level it is done, and in some cases what work will be done" (McMahan & Lawler, 1994: 4). Two forms of participative practices are suggestion involvement and job involvement and they form one facet of the broad range of activities that constitute employee involvement (Lawler, 1986; Ledford, 1993).

In the next few sections we will discuss briefly some of the issues introduced above and propose several hypotheses on the contextual predictors of increased adoption of participative practices in organizations.

Employee Involvement as a specific concept

Specific definitions of employee involvement have been proposed (Lawler, 1986; 1992; Lawler, Ledford & Mohrman, 1989; Lawler, Mohrman & Ledford, 1992; Ledford, 1993; McMahan & Lawler, 1994). Employee involvement can be distinguished from several other concepts such as quality improvement, union avoidance and Japanese-style management, and human resource practices (Ledford, 1993). According to Lawler (1986) employee involvement is the "extension of power to make decisions, business information, rewards for performance, and technical and social skills to the lowest levels of the organization". It is reflected in the way an organization is structured and the

manner in which work is designed and managed. Further, various levels of employee involvement can be identified. Three different types of employee involvement are suggestion involvement, job involvement, and high involvement. Suggestion involvement entails the power to make suggestions for change, but not the power to make decisions. Common forms of such involvement are quality circles and participation groups. Job involvement has to do with changes in the design of work so that employees are in more control of day-to-day decisions that are relevant to their jobs. A typical exemplar of this form of involvement is self managing teams. High involvement extends further to provide employees the opportunity to participate in managing the business. It entails a variety of power sharing, information and knowledge sharing, skill building, reward, and related human resource practices to facilitate and reinforce employee involvement.

However, several studies that have been associated with employee involvement have examined adoption issues and impacts of human resource policies and practices in organizations (Delaney, Lewin & Ichniowski, 1989; Ichniowski, Shaw & Prennushi, 1993; Levine & Tyson, 1990; Kelley & Harrison, 1992; Huselid, 1993). For example, Ichniowski et al., (1993) in their study of steel finishing lines found that systems of human resource practices had larger productivity effects than individual practices. Huselid (1993) found that human resource practices had strong effects on productivity and employee turnover. Further, firms with a larger number of exempt employees were more likely to use sophisticated human resource practices.

Employee involvement as a multi-level concept

Employee involvement is also a multi-level concept. The various levels of employee involvement proposed by Lawler (1986) differ in their level of complexity. Each level is qualitatively different in the amount of involvement predicated. However, the limited studies that have directly examined adoption of employee involvement practice (Osterman, 1994; Eaton & Voos, 1992) have overlooked the 'nature of innovation' (for example, complexity) as an important contingency mediating the

relationship between contextual predictors and innovation adoption patterns. For example, Osterman (1994) in his study of determinants of adoption of "innovative work practices" in 694 manufacturing establishments lumped together self-managing teams, quality circles, job rotation, and total quality management into one single category.

This sort of approach dilutes the full range of factors that come into play in influencing adoption behavior (Bolton, 1993). Different innovations diffuse at different rates, can be influenced by different variables and can involve different decision making processes (Teece, 1981; Damanpour & Evan, 1984; Daft, 1978; Kimberly & Evanisko, 1981; Rogers, 1983). The characteristics of the innovation are of critical importance in determining its adoption rate (Zaltman, Duncan & Holbek, 1973). Further, the characteristics of the innovation interact with the characteristics of the innovating organization (including the effects of environmental conditions an organization is faced with) in determining adoption (Hage & Aiken, 1970; Bolton, 1993; Mann & March, 1978).

Zaltman et al., (1973) have identified several characteristics of an innovation that can mediate its adoption patterns. Some of these characteristics are: (1). cost, both economic and social. Economic costs have to do with how expensive or inexpensive an innovation is and social costs involve changed status arrangements within the organization as individuals and groups gain or lose power because of the new developments (2). risk and uncertainty: the less the risk and uncertainty, the greater the likelihood of an innovation being adopted, and (3). complexity; more complex innovations are less likely to be adopted than simpler ones. Frequently, complex social innovations also tend to be high on economic and social costs, and carry higher perceptions of risk and uncertainty. Therefore, complex innovations are more novel and less commonplace than simpler innovations.

The three levels of involvement systems vary in their level of complexity and can be viewed as existing in a hierarchical ordering of involvement elements along the lines

of a Guttman scale (Ledford, 1993; Lawler and Mohrman, 1985). More complex involvement programs build upon simpler ones by sequentially adding elements. Further the levels also differ in the amount of cost involved and perceptions of associated risks. The suggestion involvement is the simplest, least expensive, and easiest to implement. It does not demand radical shifts in systems of hierarchical control and does not threaten internal stability and is therefore perceived as less risky (Ledford, 1993). The job involvement approach is more complex and difficult to implement than the suggestion involvement approach. A practice such as self-managing teams usually entails shifts in the traditional power arrangements of organizations (Lammers, 1975). Team members frequently are extended the authority to hire, fire, and determine pay increases of team members, functions traditionally associated with management. The high involvement approach is the most complex, expensive, and difficult of the three since it requires radical restructuring of the organization and rearrangements in power distributions.

Despite the fact that the origin of these different forms of involvement began about the same time- during the 1970s, they have different diffusion rates, which could also be a function of their differing levels of complexity (Zaltman et al., 1973). They vary on the extent to which they are 'common' or 'novel' practices. Suggestion involvement practices are the most commonplace (Ledford, 1993). Job involvement is less commonly practiced. For example, (Lawler et al., 1989) found that self managing teams (which as a concept is more complex and of recent origin than participation groups) was practiced by only 1 percent of the Fortune 1000 companies at a level which included half their work force. High involvement systems are the most novel of all. It is currently estimated that high involvement systems at best are restricted to a few innovative manufacturing plants (Ledford, 1993).

The characteristics of the organization interact with the characteristics of the innovation in determining patterns of adoption. Hage and Aiken (1970) and Hage (1980) found that specific organizational characteristics are related to the adoption of higher

levels of innovations in general, as well as more radical, complex innovations. Some of these characteristics are; higher complexity in the professional training of organizational members, higher decentralization of power, lower formalization, lower stratification in the distribution of rewards, a higher emphasis on quality versus volume of production, and pro-change values on the part of the dominant coalition. Bolton (1993) has recently argued that poor performing firms are more likely to adopt radical, complex innovations since they tend to be more risk seeking, while high performance firms are more risk-averse. The characteristics of the environment an organization is confronted with also influences innovation adoption behavior. Under conditions of increased competitive pressure, organization seek to 'out-innovate' their competitors (Mann & March, 1978; Miller, 1993).

Issues in longitudinal designs

Another limitation of extant studies that have investigated employee involvement adoption is that they have used cross sectional designs with synchronic, static predictors (Osterman, 1994; Eaton & Voos, 1992). Scholars such as Ginsberg (1988), Galbraith and Schendel (1983) and Kimberly (1976) have pointed out that this is a general problem with most change research. Ginsberg (1988) argues that by definition 'change' involves becoming different in something particular. It could be changes in degree or magnitude, or changes in state or pattern. However, many studies examine change without ever establishing that change ever happened. Cross sectional designs study variance in the dependent variable by collecting independent variables at the same point in time and come up with conclusions as to what factors influence the occurrence of various types of change. To study change requires that the occurrence of change is established which is possible only through longitudinal designs.

However, even in longitudinal designs independent variables can be conceived of in two different ways; as 'states' and 'changes in state' variables. Although states and changes in states are derived from the same underlying variable they are qualitatively

different constructs; the former indicates absolute levels, while the latter denotes rate of change and are hence dynamic. For example, size construed as the number of employees averaged over three years can indicate largeness. In contrast, rate of change in size for this period indicates dynamic shifts in workforce composition (i.e. increase or decrease). While average profitability can indicate overall financial viability, rates of change in profitability gives a sense for upturns and downturns in a firm's performance during a fixed period of time. Likewise, average capital intensity can give a sense for the level of technological investment of the firm, however, rate of change in capital intensity can indicate new technological initiatives.

In sum, Ginsberg (1988) suggests that to model change, change has to be established, and states and changes in states of independent variables have to be studied as a way to explain this change. Further, internal and external 'enduring conditions' of firms can be taken into account as explanatory variables. Examples of such enduring conditions could be type of industry.

Recent studies have taken this approach in the analyses of various change related phenomena (Alexander, 1991; Boeker & Goodstein, 1991). For example, Alexander (1991) in his study of conditions determining decentralization in multi-hospital systems looked at size and geographical dispersion as state variables and also changes in states of size and dispersion. Enduring conditions such as ownership characteristics (government, religious, secular not for profit) were also taken into consideration.

THE CONTEXTUAL BASES OF INCREASING UTILIZATION OF PARTICIPATIVE PRACTICES IN ORGANIZATIONS

Summarizing, the two major objectives of this study were to: (1). examine longitudinally increased levels of adoption of participative practices using both absolute (state variables) and dynamic (changes in state variables) predictors, and (2). investigate whether environmental and organizational characteristics mediate the adoption patterns

for two different types of participative practices namely employee participation groups and self managing teams that differed in their level of complexity.

In constructing our theoretical model of the factors that would explain increased adoption of participative practices we looked at past research on the contextual determinants of innovation adoption. In addition, we paid special attention to predictors that have also been associated with adoption behavior of innovations pertaining to more decentralized organizational practices such as matrix and multi-divisional forms. Potential explanations were derived from theories of rational organizational adaptation (Chandler, 1962), information processing (Galbraith, 1973), firm resources and capabilities (Cyert & March, 1963), technology and structure (Khandwalla, 1977), organization power and politics (Lammers, 1975), professional cultures and structure (Miller, 1967), and institutional processes (Dimaggio & Powell, 1983; Meyer & Rowan, 1977).

Theories of rational organizational adaptation, or the strategic choice view, assumes that managers act purposively to ensure organizational effectiveness and long-term survival. They react to environmental shifts by exerting influence on the environment in which they operate, and by changing the configuration and processes in the organization itself in order to improve performance (Chandler, 1962; Miles & Cameron, 1982; Miles & Snow, 1978).

Information processing theories seek to explain organizational behavior with respect to the information that must be gathered, interpreted and coordinated in the context of decision making. Information processing capacity of the organization must match the information processing requirements of the task (Galbraith, 1973). A dominant influence on the amount of information to be processed is organizational size which fosters internal problems of coordination and results in a search for new coordinative mechanisms (Kimberly & Evanisko, 1981; Smith et al., 1991).

Theories of firm resources and capabilities argue that organizations adopt structures that maximize firm efficiency and effectiveness (Cyert & March, 1963; Nelson & Winter, 1982). Organizational profits and slack are two sets of resources that enable organizations to adapt to internal pressures for adjustment by seeking new programs and innovations (Bourgeois, 1981; Burns & Wholey, 1993; Bolton, 1993).

The nature of technology influences the structural configuration of organizations, and in particular formalization and centralization (Dornbush & Scott, 1975; Khandwalla, 1974). Explicit, automated, routine technologies are positively related to formalization and centralization of decision-making (Gerwin, 1981; Yasai-Ardekani, 1989), while non-routine, complex, advanced technologies are negatively related (Van de Ven, Delbecq & Koenig, 1976; Dean & Snell, 1991).

Several studies have concluded that professionalization, formalization and centralization are incompatible (Hall, 1987; Organ & Greene, 1981; Lincoln & Zeitz, 1980). The more professionalized the workforce, the more likely that formalization and centralization will lead to conflict and alienation (Miller, 1967).

Political theorists view organizations as arenas in which coalitions with different interests and capacities for influence compete for dominance (Lammers, 1975). Various coalitions attempt to introduce changes, while others tend to resist such changes. Both actions are undertaken with the intent to bolster or preserve one's power vis-a-vis other interest groups.

Institutional theories assume that organizations adopt structures that are considered legitimate by other organizations in their fields. Legitimated structures can be transmitted to organizations in a field through tradition represented by the field's founding organizations; through imitation based on the field's currently most prevalent forms; through coercion, exercised by the field's dominant organizations; and through normative pressures diffused through social networks (Meyer & Rowan, 1977; DiMaggio & Powell, 1983).

In seeking these complementary explanations we relied on March's (1981) argument that reasons for organizational change can never be pinned down to one single explanation. Changes reflect an interplay of environmental forces, managerial incentives to change, slack, loose coupling, and symbolic actions. Similarly, others such as Burns and Wholey (1993) in their study of adoption of matrix forms, and Palmer, Jennings and Zhou (1993) in their investigation of multi-divisional forms have recognized the multiple forces that impinge on adoption behavior of firms. They sought complementary, rather than contrasting explanations for adoption. In both studies, determinants from technical rational standpoints such as firm performance and size, and non-technical, symbolic reasons such as institutional processes and organizational politics were identified. We adhered to this logic in developing our model.

The three dependent variables of concern were an overall measure of increased adoption of participative practices, and two specific practices, namely, employee participation groups and self managing teams that differed in their level of complexity. Our antecedent variables include environmental, internal (that included absolute and dynamic predictors) and enduring variables. The first two variables, competitive pressure and environmental capacity describe conditions associated with a firm's external environment. The internal variables represent individual characteristics of the firms themselves. Size, firm performance (profitability), slack resources, capital intensity, level of unionization, level of professionalization as well as the rates of change in each one of these variables fell under this category. In addition, initial adoption levels of participative practices were included under this grouping. The 'enduring' variable (Ginsberg, 1988) of interest was industry type.

HYPOTHESES

Competitive pressures

It has been frequently suggested that competitive pressures in the environment generate a felt need for timely organizational response. Rational models of organizational

adaptation argue that firms often make internal adjustments in the form of strategic and structural changes to cope with competitive pressures from the environment (Chandler, 1962; Snow & Hrebiniak, 1980; Child & Kieser, 1981; March, 1981). Under conditions of high competitive pressure organizations seek out new innovations that can provide them with competitive advantages vis-a-vis other firms operating in the same market (Miller, 1993). In their study of university departments, Manns and March (1978) found that faced with increasing competition for students, departments tended to introduce new innovations in an attempt to attract students to take their courses. Such innovations included, increase in the variety of course offerings, more attractive packaging, better accessibility to courses, and increase in course benefits through such mechanisms as credits and grades.

Participative practices have been suggested as a source for generating innovations in organizations through broad participation in decisions and wide sharing of knowledge (Burns & Wholey, 1993; Kanter, 1983; 1988; Lawler, 1986; 1992)

The above logic suggests the following hypotheses:

Hypothesis 1: Higher environmental competitive pressure will be positively associated with increased adoption of a) participative practices, overall b) employee participation groups, and c) self managing teams

Environmental capacity- growth vs. decline

It has been argued that environmental capacity (Aldrich, 1979; Dess & Beard, 1984) of an industrial segment as manifest in munificence (growth) or scarcity (decline) has consistent impacts on the structural configuration of organizations. Early studies have suggested that environmental scarcity or decline is related to increased formalization, centralization of decision making, and general tightening of the organization (Khandwalla, 1972; Freeman, 1973; Boddewyn, 1974; Pfeffer & Leblebici, 1973). Under declining conditions organizations will be subject to threat-rigidity effects (Staw, Sandelands & Dutton, 1981). In contrast, environmental munificence or growth has

frequently been associated with loosening of control. In munificent environments there will be a tendency to delegate decision making authority to lower organizational units as well as lower formalization of procedures. The rationale is that in growing environments, the cost of errors associated with relatively loose control of operations can seem negligible compared to the benefits of opportunities that accompany decentralized decision making. Pushing decision making power lower in the organization allows rapid removal of constraints (Yasai-Ardekani, 1989). In declining environments organizations often feel a loss of control. Losses associated with faulty decisions can be perceived as highly damaging to an organization's continuing viability. Greater emphasis on formalized procedures coupled with greater centralization of decision making gives management a sense of control over organizational activities. Studies of educational establishments facing declining enrollments (Cameron et al., 1978) and public sector organizations faced with resource scarcity (Levin, 1978) have reported increases in the centralization of decision making. On the other hand, this might be an inappropriate response to decline. Tightening of rules can actually hasten decline (Starbuck & Hedberg, 1977; DeWitt, 1993; Rosenblatt, Rogers & Nord, 1993; Alexander, 1991; Daft & Lewin, 1993). At least some organizations are appearing to respond to environmental decline by becoming more proactive and risk taking and adopting employee involvement approaches to deal with the increased performance pressures. Rosenblatt et al. (1993) in their study of a school district facing decline found that the schools responded successfully by implementing a broad plan of participation and decentralized decision making. Alexander (1991) found that multi hospital systems facing resource scarcity due to competition from HMOs and the introduction of Medicare's prospective payment system, decentralized quite rapidly. Similarly, Zager and Rosow (1982) and Gutchess (1985) have presented case studies of organizations responding to decrease in resources through participative and other decentralized approaches.

It could be predicted that this pattern of loosening up controls when facing environmental decline is more prevalent in today's times than before. Organizations exist in hyper-competitive, hyper-turbulent environments. Rapid shifts in environmental conditions are more the rule than the exception and organizations could be getting more used to the idea that change is a way of life and learning to become more responsive by adopting participative approaches (Daft & Lewin, 1993). This is an emergent trend observe Daft and Lewin (1993: ii); "it seems increasingly clear that for many managers operating in these turbulent environments the design of the organization itself has emerged as a new strategic variable...Managers in many organizations are at the frontier of finding new ways to use both human resources and technology in the creation of new organizational forms. Characteristics of these new organizations seem to include flatter hierarchies, decentralized decision making,..empowerment of employees, self-organizing units, and self-integrating coordination mechanisms" Given this emergent trend the following hypothesis is plausible:

Hypothesis 2. Conditions of environmental decline will be positively associated with increased adoption of a) participative practices, overall b) employee participation groups, and c) self managing teams

Size

Organizational size has been frequently linked to innovation adoption behavior (Hage, 1980; Moch, 1976; Moch & Morse, 1977). This has been especially the case for innovations that will allow decentralization and facilitate requirements of coordination in large organizations (Blau & Schoenherr, 1971; Mansfield, 1973). With increase in size there can also be corresponding increase in levels and departments (structural complexity) that can block information from decision makers to implementers, which in turn forces organizations to adopt new structures that will permit decentralized decision making. It has traditionally been assumed that there is a linear relationship between increases in size and increased adoption of decentralized structures (Blau, 1973; Burns and Wholey,

1993), although some such as Downs and Mohr (1976) have observed that a firm's presumed inherent characteristics such as size have "repeatedly failed to robustly predict innovation" (p. 700). Likewise, more recently Daft and Lewin (1993) have observed that although traditionally size was assumed to be a fixed part of organizational patterns and was associated with predictable changes in structure and design, such assumptions are not valid given contemporary realities.

Recent research evidence suggests that size effects are mediated by the maturity of an innovation (Burns & Wholey, 1993; Palmer et al., 1993). As an innovation becomes more common place size is no longer a distinguishing factor in adoption or increases in adoption. Mature innovations are diffused widely across small and large organizations. Size effects can play a role in early adoption behavior. For example, Burns and Wholey (1993) predicted size to be a significant determinant in the utilization of matrix forms. Likewise, Palmer, Jennings and Zhou (1993) hypothesized that large firms are more likely to adopt multi-divisional forms than smaller firms. However in both instances, contrary to predictions, the researchers concluded that size effects diminish over time. The only situation in which size effects dominated were in geographical regions with low prior acceptance of matrix management programs (Burns & Wholey, 1993). Extrapolation from this recent trend raises the possibility that size effects will not be associated with increased adoption of some commonplace innovations such as employee participation groups, although size could be positively associated with more less commonplace innovations such as self managing teams. Hence;

Hypothesis 3: Firm size will not be associated with increased adoption of participative practices, overall and employee participation groups

Hypothesis 4: Firm size will be positively associated with increased adoption of self managing teams

Changes in size- downsizing

Environmental decline and downsizing are closely linked notions. Frequently, decline is followed by downsizing (Rosenblatt et al., 1993). Although traditional logic may dictate that downsizing will be accompanied by 'rigid' structuring activities, some recent studies such as Sutton and D'Aunno (1989) have suggested that downsizing can generate both mechanistic and organic shifts in structure. Depending on the strategy chosen to address downsizing, activities may be undertaken to increase the responsiveness of the organization (DeWitt, 1993). Other studies have shown instances where various forms of employee involvement practices have been introduced to cope with downsizing (Mohrman & Mohrman, 1983; Kochan, MacDuffie & Osterman, 1988). In sum, many of the same arguments that suggest increasing adoption of participative practices in the face of environmental decline will also apply to downsizing.

There could be other reasons linking downsizing to the increasing use of participative practices. For one, during downsizing organizational events become less routine and less predictable making it possible to introduce and legitimate changes that were not possible in a former bureaucratized environment (Hall, 1976). Participative practices could be viewed as a trust building strategy in a down-sized environment plagued with feelings of uncertainty and low levels of trust. Further, innovations such as self-managing teams can enable more efficient utilization of resources in a potential resource scarce environment, particularly human resources. Therefore;

Hypothesis 5: Firm downsizing will be positively associated with increased adoption of ;
a) participative practices, overall b) employee participation groups and c) self-managing teams.

Firm Performance- profitability

Ever since Cyert and March (1963) first raised the question, researchers have been ideologically split whether poor performance or successful performance fosters innovations, including the implementation of new ideas and procedures. Some argue that poor performance is associated with a sense of urgency and pressures managers to seek

new ways of improving performance (Miles & Cameron, 1982; Kiesler & Sproull, 1982). Organizations with a history of success will resist fundamental changes, especially the longer the period the success has lasted (Tushman & Romanelli, 1985). Organizational routines tend to persist as long as performance is adequate (Nelson & Winter, 1982).

Others argue that successful performance encourages adaptation. Successful organizations attempt new strategies and new organizational arrangements, such as new products and new markets or experiments with new organizational structures in an effort to maintain their record of successful performance (Hambrick & Snow, 1977). Moreover, successful organizations can more easily afford the costs of innovating than can unsuccessful organizations (Cyert & March, 1963). According to this perspective, poor performance curtails organizational action by exacerbating conservatism and inertia (Whetten, 1987). Performance problems can restrict the sources of information consulted and alternatives considered, limitations in turn that augment inertial tendencies.

Recent research has attempted to address this controversy by suggesting a third perspective (Bolton, 1993). The relationship between varying levels of performance and innovation adoption is not simply an 'either/or' issue. It is possible that both poor and successful performance are related to the adoption of innovations but the difference could be in the timing of the adoption decision. Organizations that are stimulated by poor performance to adopt innovations may be more venturesome and risk taking (Singh, 1986) and hence can be 'early' adopters. Firms experiencing poor performance may have little to lose and potentially much to benefit by early adoption. High performing firms on the contrary pursue less risky, late adopter strategies. There is increasing evidence that high performance firms are less risk averse (Bromiley, 1991). Early adopters buffer the risks for late adopters. High performance firms may delay action until the benefits associated with novel practices and new organizational forms are demonstrated and the risks of "liabilities of newness" are mitigated. Bolton (1993) found support for this thesis

in her study of 74 high technology firms and the timing of their decisions to join an R&D consortium. Substandard performance stimulated early joiners of R&D consortia, and risk-averse, high performance firms were found to be late adopters of R&D consortia. Hence, we can postulate that high firm performance will be positively related to adoption of commonplace participative practices, and negatively related to more novel ones.

Hypothesis 6: Higher firm profitability will be positively associated with increased adoption of a) participative practices, overall, and b) employee participation groups.

Hypothesis 7: Higher firm profitability will not be associated with increased adoption of self-managing teams

Changes in Performance- performance fluctuations

Past research on organizational decline exhibits considerable controversy over how to conceptualize and measure firm performance (Cameron, Sutton & Whetten, 1988). Should fluctuations in financial viability be measured across each year of study, or should financial health be gauged as an average over several years? Are adoption decisions related to average performance or organizations respond to the upturns and downturns in financial performance within a fixed period of time in making adoption decisions (Bolton, 1993)? Our reasoning is that financial viability is indicated better by average performance. Hence;

Hypothesis 8: Changes in profitability will be not be associated with a) increased adoption of participative practices, overall b) employee participation groups, and c) self managing teams.

Slack Resources and changes in slack resources

Slack resources have figured prominently in innovation adoption research. However, there is some controversy over whether it is slack resources that stimulates innovation or is it firm performance as defined by profitability. Cyert and March (1963) proposed that a firm's slack level, or uncommitted excess resources, constitutes a critical basis for starting new programs, a view supported by some other scholars (Mansfield,

1968; Bourgeois, 1981; Greenhalgh, 1983; Bromiley, 1991). In contrast, some recent findings (Bolton, 1993; Burns & Wholey, 1993) have suggested that slack is unrelated to adoption behavior while profitability is. In fact, Bolton (1993) found that slack resources was not correlated with either high or low performance. One possible explanation is that slack resources come into play for the adoption of more expensive technological innovations, while resources for administrative innovations come from operating profits. Given these mixed findings, we favor the more extensive body of literature that supports slack resources as a potential determinant of innovation adoption. However, we advance a contingency relationship. Relying on the logic that slack resources will be employed for more expensive technological innovations, we posit a positive relationship between higher levels of slack resources and the adoption of self-managing teams which is a more complex and expensive innovation. Organizations may or may not deploy slack resources for less expensive, simpler innovations. Hence;

Hypothesis 9: Higher organizational slack resources will not be associated with the increased adoption of a) participative practices, overall, and b) employee participation groups.

Hypothesis 10: Higher organizational slack resources will be positively associated with the increased adoption of self-managing teams

We do not perceive short-term changes in the level of slack resources to significantly influence managers' decisions about adoption. Just like average profitability, average slack resources is a better indicator of financial viability. Therefore;

Hypothesis 11: Increases in the level of slack resources will not be associated with the increased adoption of a) participative practices, overall b) employee participation groups, and c) self-managing teams

New Technology initiatives- rate of change in capital intensity

Over the past few years organizations are undertaking massive technological reorganizations in response to global competition. Many researchers argue that these changes comprise a completely new paradigm of manufacturing and service that extends

beyond the adoption of new technology to encompass organization wide transformation. (Dean & Snell, 1991; Dean & Susman, 1989; Majchrzak, 1988; Davenport, 1992). These changes include advanced manufacturing technology with a heavy emphasis on information technology such as computer aided design, manufacturing, and process planning. Frequently, these technologies are combined into flexible or computer-integrated manufacturing systems (Dean & Snell, 1991). Business process reengineering is more typical of service organizations such as banks, retail firms, and insurance companies where complete infrastructures are reorganized with a heavy emphasis on information systems support (Davenport, 1992; Hall, Rosenthal & Wade, 1993). A critical element of these new technological initiatives is that they entail radical changes in work forms, structures, and practices (Dean & Snell, 1991; Mortimer, 1985).

Dean and Snell (1991) argue that three salient aspects of job design are transformed in the process of such technology based reorganizations. Task complexity is increased where individual technical knowledge must extend well beyond their own function to encompass aspects of adjacent stages of the process. Task variety is enhanced where employees are encountering more exceptional circumstances and doing work previously reserved for other functions. Consequently, task interdependence is also increased where various unit personnel have to diagnose, problem-solve, and collaborate in order to get the work done. In essence, these new technological initiatives are prime candidates for various kinds of participative practices, especially self-managing teams.

Hence;

Hypothesis 12: New technological initiatives will be positively associated with increased adoption of a) participative practices, overall b) employee participation groups, and c) self-managing teams

Technological capital intensity

Rate of change in technological capital intensity can be a good indicator of new technological initiatives, however average capital intensity can denote the level of

investment in technological capital. Traditionally, higher levels of capital intensity have been associated with fixed, automated, explicit technologies (Yasai-Ardekani, 1989). Explicitness of technology is the degree to which a well defined task-technology combination exists. Explicit technologies often involve highly automated, specialized equipment, with fixed sequence of activities and tasks in the conversion process (Gerwin, 1981; Inkson, Pugh & Hickson, 1970). Many scholars have suggested that explicit technologies are also inflexible and therefore explicitness is positively related to formalization and centralization of decision making (Khandwalla, 1974; Tracy & Azumi, 1976). The underlying premise is that since explicit technologies allow greater regulation of work-flow they lend themselves to more bureaucratic modes of control (Dornbusch & Scott, 1975; Ouchi, 1977). For example, Ouchi (1977) notes that homogenous tasks as found under conditions of explicit, predictable technology contribute to the utilization of output controls, such as monitoring the number of units produced, sales transacted or cards punched. In summary, in routine situations, where the task and technology are explicit and fixed, well specified rules govern the actions of organizational members and there is likely to be little in the way of delegating power through participation. It is only in less routine situations, where there is task uncertainty, practices such as group meetings are likely to be introduced in an attempt to come up with problem resolution (Van de Ven, Delbecq & Koenig, 1976). Therefore;

Hypothesis 13: High levels of technological intensity will be negatively associated with increased adoption of a) participative practices, overall b) employee participation groups, and c) self managing teams

Unionization and changes in unionization

The effects of unionization on the diffusion of employee involvement practices is of emergent interest (McMahan & Lawler, 1994). Arguments have been made both for the absence and the presence of union in mediating adoption of employee involvement practices. Non union firms may embrace participative practices in order to keep unions

out (Eaton & Voos, 1992). Alternately, in non-union environments the power distribution could be more concentrated in favor of management who may not want to democratize the work place (Bluestone & Bluestone, 1992). Similarly, presence of a union can help and hinder the adoption of participative practices. Unions can help create the awareness necessary to start an employee involvement effort. Structure of the union organization can help implement certain employee involvement programs. On the contrary, union and management may not trust each other due to a past adversarial history, and adequate trust is a major requirement for employee involvement activities. Further, the introduction of employee involvement programs can be interpreted as an intrusion into the power base of the union. As Michels (1949) reminds us power has a self-perpetuating aspect. Power groups in social systems seek to increase their power or at least persevere to maintain the existing power distributions in order to not lose power.

A recent review by McMahan and Lawler (1994) came to the conclusion that there appears to be little relationship between unionization and employee involvement adoption. Their conclusions were drawn from inconsistent findings in the literature. Unions differ vastly in their attitudes towards employee involvement. Some unions are supportive, while others are resistant with the net result being the lack of a uniform pattern. The authors, however, qualify their conclusions as tentative due to limited studies, poor samples, low response rates, and many of the studies not being designed to specifically test for the effects of unionization on employee involvement practices.

The Dutch sociologist Lammer's (1975) insights provide interesting implications for a contingency perspective on the relationship of the level of unionization to the adoption of participative practices. Lammer's has proposed that some changes to alter traditional power arrangements are more easily accepted and implemented than others. Changing to a participative management style which would entail practices such as suggestion systems are easy to introduce. This kind of intervention is a form of functional decentralization that does not threaten traditional power arrangements.

However, management-by-participation or self-management involve shifts in power balance where employees take over organizational management. These are structural decentralizations that lead to power equalization and are thus harder to achieve.

While Lammer's work is framed in the context of management's resistance to democratize the work place, the larger theoretic framework he appeals to is Michel's (1949) work on the self-perpetuating quality of power. Groups with large concentrations of power resist changes to traditional patterns of power distribution. Higher levels of unionization represent higher concentrations of power in the hands of the union. Unions can oppose structural modification such as self-managing teams since these teams frequently hold responsibility for functions such as hiring and firing, and determining member pay increases. These changes go against the basic seniority and job classification systems that are associated with union representation. Thus, while patterns may be inconsistent with simple forms of participative practices such as suggestion systems, complex forms such as self-management probably will be viewed as intrusions on the power base of a stronger union. Hence;

Hypothesis 14: Higher levels of unionization of a firm will not be associated with increased adoption of: a) participative practices, overall, and b) employee participation groups,

Hypothesis 15: Higher levels of unionization of a firm will be associated negatively with increased adoption of self managing teams

Hypothesis 16: Increases in the level of unionization of a firm will not be associated with increased adoption of: a) participative practices, overall, and b) employee participation groups,

Hypothesis 17: Increases in the level of unionization of a firm will be associated negatively with increased adoption of self managing teams

Professionalization and changes in level of professionalization

Increasing number of professionals of all sorts are working in organizations and many occupations are attempting to professionalize (Hall, 1987) which is also consistent

with the general trend toward the emergence of more knowledge intensive organizations (Starbuck, 1992) . Level of professionalization has been associated with the adoption of high levels of innovation (Hage & Aiken, 1970; Hage, 1980).

Professional work environments are particularly suitable for participative practices since professionals by the nature of their work and by virtue of their specialized training seek more personal control over their work activities. An early analysis of this phenomenon was Miller's (1967) study of the degree of alienation experienced by scientists and engineers employed in a large corporation in the aerospace industry. These professionals reported that they felt more alienation when there was more directive, than participative supervisory practices and less alienation when they felt some personal control over decisions affecting their work such as having a say in the nature of their own research efforts. Miller (1967) also found that the length of professional training was related to the extent of alienation felt. The more training people have (for example a Ph.D. versus an M.S) the more likely they are to feel alienation under those conditions that produce it for the group of professionals as a whole.

Similarly other studies (Organ & Greene, 1981; Lincoln & Zeitz, 1980; Hall 1987) have concluded that professionalization and centralization of decision making are incompatible. Hall (1987) has observed that even if the task and technology are routine and explicit, if professionals are involved there will be less centralization in such organizations than comparable organizations employing a lower number of professionals. Therefore in general one can expect that level of professionalization and increases in levels professionals will be related to adoption of participative practices. However, a point of importance is that frequently professionals also desire, ask for, and achieve participation in decision making (Lincoln & Zeitz, 1980) and do not have to wait for the formal installation of a program. This raises the possibility that professionalization will be related to the adoption of more complex and novel participative practices than simple, commonplace innovations. Hence;

Hypothesis 18: The level of professionalization of a firm will be positively associated with increased adoption of a) participative practices, overall, and b) self managing teams

Hypothesis 19: The level of professionalization of a firm will not be associated with increased adoption of employee participation groups

Hypothesis 20: Increases in the level of professionalization of a firm will be positively associated with increased adoption of a) participative practices, overall, and b) self managing teams

Hypothesis 21: Increases in the level of professionalization of a firm will not be associated with increased adoption of employee participation groups

Type of industry

Institutional theorists have argued that organizations adopt innovations to conform to the prevailing norms in their institutional environments (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). In addition to mimetic isomorphism (or adoption by imitation), normative isomorphic processes (or following the norms of a network one is part of) can also operate as a function of the cumulative level of adoption among fellow members of an industry group (Burns & Wholey, 1993). Several studies have suggested that employee involvement (Cooke, 1988) and related practices from the socio-technical systems tradition (Pasmore et al., 1982) have had a stronger presence in the manufacturing sector than the service sector.

Therefore;

Hypothesis 22: Compared to Service firms, manufacturing firms will show greater adoption of a) participative practices, overall, b) employee participation groups, and c) self managing teams.

Initial adoption levels of participative practices

Institutional forces can operate within an organization also. Organizations exhibit internal network relations. Rogers (1983) argued that homophily, or the sharing of values and norms, among members of a network enhances the diffusion of information and promotes adoption among other members of the network. Within such local networks the

cumulative level of adoption influences new adoption by bringing "one news of innovations, support for adoption, helpful hints regarding implementation, and social support encouraging change (Scott, 1990: 184). Hence;

Hypothesis 23: Initial levels of overall adoption measure of participative practices will be positively associated with increased adoption of participative practices overall

Hypothesis 24: Initial adoption levels of employee participation groups will be positively associated with increased adoption of employee participation groups

Hypothesis 25: Initial adoption levels of self managing teams will be positively associated with increased adoption of self managing teams

As noted earlier it has been proposed that suggestion involvement, job involvement, and high involvement can be viewed as existing in a hierarchical ordering of involvement elements along the lines of a Guttman scale (Lawler, 1986; Lawler & Mohrman, 1985; Ledford, 1993). More complex involvement programs build on simpler ones by sequentially adding elements. A test of this proposition suggests the following hypothesis.

Hypothesis 26: Initial adoption levels of employee participation groups will be positively associated with the increased adoption of self managing teams.

METHODS

Data

The unit of analysis for this study was a matched set of Fortune 1000 companies (the Fortune 500 service and the Fortune 500 manufacturing firms) in the U.S. The sample was drawn from a larger longitudinal study where data was collected from Fortune 1000 firms in 1987, 1990, and 1993 (Lawler, Ledford and Mohrman, 1989; Lawler, Mohrman and Ledford, 1992). However, for the purposes of this study only data collected in 1990 and 1993 was considered. The data collection effort consisted of survey

measures and data from Compact disclosure a specialized data base that carries financial and other archival information on Fortune 1000 companies.

Surveys were mailed to a single respondent in each company who was well-placed to be knowledgeable about the company and its employee involvement policies (typical job titles were Vice President of Human Resources and the Director of Employee Involvement). This strategy was consistent with the assumption employed by several earlier studies that a single top administrator can provide reliable information about organizational characteristics (Alexander, 1991; Burns & Wholey, 1993; Hambrick, 1981; Hrebiniak & Snow, 1980; Tung, 1975). Response rates to the surveys in 1990 and 1993 were 31% (N= 313) and 28% (N=279) respectively. The 130 companies that were common to both data collection periods represented the primary study group, or the panel data, that formed the basis for the study. The panel data consisted of 78 companies in the manufacturing sector and 52 companies in the service sector. 43 companies did not have any form of labor union while 87 had some form of labor union.

Information on the three dependent variables, an overall measure of participative practices, employee participation groups, and self managing teams was collected through the survey. For some independent variables we relied on Compact Disclosure and for others we used the survey. Information on environmental capacity, competitive pressures, profitability, slack resources, capital intensity and Industry type were obtained from Compact Disclosure. Since we assumed a one year lag period between changes in the independent variables and changes in the dependent variables (Boeker & Goodstein, 1991) we collected data for the years 1988 to 1991 given our two measurement points of 1990 and 1993. Both average levels and rates of change were computed from this data. However, for Size (measured as number of employees) and level of unionization and professionalization we relied on the survey since the information in Compact Disclosure tapes pertains to the total number of employees across all the countries in which a firm was operating. Since our survey was restricted to the utilization of participative practices

in a firm's U.S. operations, we thought the survey was the more appropriate source. Therefore, the size measure as well as the levels of unionization and professionalization really reflect the reported figures from 1990.

Measurements

Participative practices. The overall measure of participative practices was operationalized as an average of seven practices. Respondent were asked to rate on a seven point scale the percent of employees in the firm's U.S. operations (1 representing '0 percent' and 7 representing '100 percent') currently involved in suggestion system, survey feedback, job enrichment, quality circles (QC), other employee participation groups such as task teams or work councils, self-managing work teams, and mini-business units (specific description of each item appears in the appendix 1). We used employee participation groups and self-managing teams as the other two dependent variables. The Cronbach Alpha for both administrations of the scale (1990 and 1993) was .72

Firm level determinants. Profitability has been a dominant measure of firm performance in several studies (Smith et al., 1991). Following Palmer et al., (1993) we measured profitability as return on equity (total income/common equity). Slack resources was measured as selling, general and administrative expenses divided by total revenue (Singh, 1986; Burns & Wholey, 1993). Technological capital intensity was measured as value of plant and equipment divided by total number of employees (Hill & Snell, 1989). Average profitability, average slack resources, and average technological capital intensity represent mean figures for 1988 to 1991. Rate of change in profitability, slack resources and technological capital intensity (representing new technological initiatives) was measured as the average of the annual proportionate change of a variable from the level of the same variable in the previous year: $[(X_t - X_{t-1})/X_{t-1}]$. Averages were computed

based on the rate of change for each year between 1988 and 1991. The same formula was employed for assessing rate of change for all independent variables.

We chose the number of employees to measure size since it is the most commonly used indicator (Hall, 1987; Kimberly 1976) and was most relevant for assessing firm downsizing. Size represents the number of employees in U.S. operations in 1990. Level of unionization was computed as the percent of non-managerial employees in the firm represented by labor union(s) if any. Similarly, level of professionalization was measured as the percent of professionals employed in the firm relative to the total work force in U.S. operations in 1990. Rates of change in size, levels of unionization and professionalization reflect proportionate changes evidenced between 1990 and 1993.

Environmental determinants. The rate of change of demand for a specific industry's products and/or services is traditionally used to assess environmental capacity: An increasing rate of demand indicates environmental munificence while a declining rate of demand denotes scarcity (Yasai-Ardekani, 1989; Baucus & Near, 1991). We defined industrial segment using the Fortune 500 manufacturing and service classifications (see appendix 2 for the specific classifications). The rate of change in sales was assessed from 1988 to 1991 for all the industrial segments.

Competitiveness within an industrial segment at a point in time can be conceived of as the total available market relative to the total number of firms operating within an industrial segment (Scherer, 1980; Boeker & Goodstein, 1991; Friedman & Shortell, 1988). However, since total sales volume relative to the number of firms operating within the industry is not a standardizable measure across the various industries, the rate of change in this ratio is a comparable indicator of competitive pressure. Rate of change in competitive pressure was assessed using the Fortune manufacturing and service industry classifications from 1988 to 1991.

Industry type. We used dummy codes to represent Industry type. Firms which fell under the Fortune manufacturing classification were coded 0 and firms under the service classification were coded 1.

Analytical strategy

To assess if there was an overall increase in the utilization of participative practices in organizations, paired t-tests were employed to compare the 1990 scores with the 1993 scores for the panel group.

Systematic mortality of survey respondents may bias comparisons and changes reported in the utilization of participative practices can be an artifact of different people responding to the survey each time. In order to test for such effects, we compared the attrition or the non-panel group from 1990 (N=183) with the non-panel group in 1993 (N=149) on measures of participative practices through paired t-tests.

Since the loss of 183 companies from the 1990 data set can have repercussions on the internal validity of the study and limit generalizability we compared the panel data of 130 companies with the attrition group of 183 companies in 1990 on industry type (manufacturing- service) size, and union status (absence-presence) using t-tests.

We used multiple linear regression analyses to test our various hypotheses advancing arguments regarding the relationships between various environmental, firm specific, and enduring contextual determinants, and changes in the utilization of participative practices, employee participation groups, and self managing teams. For each dependent variable we used three versions of the model. Keeping with past studies (Alexander, 1991; Boeker & Goodstein, 1991) employing both absolute (state) and dynamic (rate of change) versions of the same variables, we used two different models. Model one used the absolute version of a predictor, while model two used the dynamic version, and model three was a combined one. We included environmental capacity with the dynamic predictor model since it was a dynamic construct measuring rate of change

in sales. We also conducted tests for potential multi-collinearity effects on all the models.

RESULTS

Paired t-tests suggested that there was a significant overall increase in utilization of participative practices and self managing teams for the panel data. Employee participation groups also showed an increase in utilization, however, the increase was close to significance ($p \leq .07$). The changes in utilization rates of the different participative practices are displayed in Table 1.

 Insert Table 1 about here

The t-tests employed to check for potential response bias caused by systematic mortality of survey respondents suggested that there were no confounding effects of respondent bias. Comparisons of the attrition or the non-panel group from 1990 with the non-panel group in 1993 on an overall measure of participative practices ($t = 2.90, p < .004, df = 1, 328$), employee participation groups ($t = 3.25, p < .001, df = 1, 325$), and self-managing teams ($t = 3.23, p < .001, df = 1, 326$) also suggested an overall increase in utilization.

Our third set of tests comparing the 130 companies in the panel with the non-panel group of 183 for 1990 suggested that the attrition rate did not have serious repercussions on the internal validity of the study or generalizability. T-test results suggested that there were no significant differences between the two groups, on type of industry ($t = 1.48, p < .14, df = 1, 311$), union status ($t = -.94, p < .35, df = 1, 311$) or size ($t = -1.94, p < .06, df = 1, 311$)

Table 2 provides group means, standard deviations, and correlations among all variables used in the regression models. As evident from the correlation matrix,

environmental capacity (munificence/scarcity) and environmental competitive pressure were very highly correlated ($r = .82$). So we dropped environmental competitive pressure from the regression models. Level of professionalization and level of unionization showed a correlation coefficient of .43 and therefore was of some concern. However, our results did not change for a version of the model in which level of unionization was excluded. Further, multicollinearity diagnostics (results not included but available from authors) suggested that no two variable coefficients shared a high proportion of variance that could be associated with the same eigen value (Belsley et al., 1980).

Insert Table 2 about here

Table 3 presents the results of the regression analyses for all three independent variables. Since many of our hypotheses were clustered together in advancing relationships between the independent variables and the three dependent variables it requires that the regression models be examined simultaneously.

Insert Tables 3, 4, and 5 about here

As noted earlier, we dropped competitive pressure from the model due to multicollinearity problems and therefore hypotheses 1a, 1b, and 1c were not tested. As advanced by hypothesis 2a environmental decline was positively associated with increased adoption of participative practices overall, but was not related to increases in adoption of either employee participation groups or self-managing teams (hypothesis 2b and 2c). This finding suggests that organizations facing declining environments tend to use participative practices. However, the lack of identifiable patterns in terms of specific

participative approaches suggests that such organizations vary in the specific type of participative practices utilized.

As predicted by hypothesis 3a size was not related to increases in the adoption of overall participative practices. However, size negatively predicted increased adoption of employee participation groups. This finding was contradictory to hypothesis 3b that size will not be related to increased adoption of commonplace innovations such as employee participation groups. On the contrary, this finding suggested that the relationship between the maturity of an innovation and organization size could be curvilinear, which is interesting. Contrary to hypothesis 4 we found that size was not related to increased adoption of self-managing teams, which is puzzling given the overall pattern.

Hypothesis 5a, 5b, and 5c predicted that downsizing will be positively associated with increased adoption of participative practices, employee participation groups, and self-managing teams. Our predictions were supported in the case of participative practices and self-managing teams (5a and 5c), but not in the case of employee participation groups. We found the positive relationship between downsizing and increased adoption of self-managing teams to be intriguing. This finding raises the possibility that organizations may tend to use downsizing not only as an opportunity to increase their utilization of participative practices, but also but also to introduce and legitimate radical, complex changes that were not possible in a previously bureaucratized environment (Hall, 1976).

We found support for hypotheses 6a and 6b that were based on Bolton's (1993) argument that successful firms are risk averse and therefore high firm performance will be positively related to increased adoption of commonplace participative practices. Higher firm profitability significantly predicted increased adoption of participative practices, overall, and employee participation groups. Hypothesis 7 suggested that higher firm profitability will not be related to the utilization of self-managing teams since they are less commonplace and can be associated with more perceptions of risk. The argument was supported. Hypothesis 8 predicted changes in profitability will not be associated with

adoption behavior, and average profitability is a better indicator of firm financial viability. We found support for this notion also.

Relying on the reasoning the slack resource will be deployed for the adoption of more complex, expensive innovations, hypotheses 9a and 9b suggested that average slack resources will not be related to increased adoption of participative practices and employee participation groups, but will be related to adoption of self-managing teams (hypothesis 10). We did not find support for hypothesis 10, although slack resources did not show any relationship to the other two dependent variables. The results could have been influenced by the formula employed in calculating slack resources. Bourgeois and Singh (1983) have divided slack into three categories; available, recoverable, and potential. Our computation of slack resources reflected recoverable slack. Change in the level of slack resources as expected was not related to increased utilization of any of the dependent variables (Hypotheses 11a, 11b, and 11c).

Contrary to hypotheses 12a, 12b, and 12c, new technology initiatives did not show any relationship to increased adoption of participative practices, overall, employee participation groups, or self-managing teams. Similarly, we did not find any support for hypotheses 13a, 13b, and 13c, that predicted a negative relationship between higher levels of technological intensity and all three dependent variables. Again, the results could be influenced by the manner in which capital intensity was computed (Buzzel & Gale, 1987). Further, the extent to which capital intensity, or changes in capital intensity accurately reflect fixed automated technologies or new technological initiatives respectively, is debatable.

Hypotheses 14a and 14b advanced that level of unionization will not be related to adoption of participative practices, overall, and employee participation groups. However, hypothesis 15 proposed that level of unionization will be negatively related to the increased adoption of self-managing teams. The rationale was that while patterns may be

inconsistent with simple forms of participative practices, complex forms such as self-managing teams will be viewed as an intrusions on the power base of a stronger union. All three hypotheses were supported. Hypotheses 16a and 16b, and hypothesis 17 predicted similar relationships between increase in level of unionization and the dependent variables. The pattern of results was consistent except that 'change in level of unionization' was not related to adoption of self-managing teams.

Hypotheses 18a and 18b, predicted that the level of professionalization of a firm will be positively associated with increased adoption of participative practices, overall, and self-managing teams. However, level of professionalization will not be related to employee participation groups (hypothesis 19). Likewise, hypotheses 20a, and 20b, and 21 advanced similar relationships between increases in the level of professionalization of a firm and the dependent variables. The logic was that since professionals by nature ask for, and achieve participation, professionalization will be related to adoption of more complex participative practices (Lincoln & Zeitz, 1980). We did not find support for hypotheses 18a, or 18b. Level of professionalization was not related to employee participation groups (hypothesis 19). However, we found support for hypothesis 20b. Increase in level of professionalization was positively related to increased utilization of self-managing teams.

Drawing from institutional theories, hypothesis 22 argued that manufacturing firms will show greater adoption of participative practices, overall, employee participation groups (hypothesis 22b), and self managing teams (hypothesis 22c), compared to service firms. The hypotheses were confirmed.

Hypotheses 23, 24 and 25 predicted that initial levels of adoption will be positively associated with increased adoption of participative practices, overall, employee

participation groups, and self-managing teams since institutional forces can operate within organizations also. We found support for all three hypotheses.

Finally, hypothesis 26 tested the proposition that more complex involvement programs build on simpler ones by sequentially adding elements. Thus, initial adoption levels of participation groups will be positively associated with increased adoption self-managing teams. We found weak support for this hypothesis. The relationship was significant at the .10 level.

DISCUSSION

Drawing on multiple frameworks, this study tested several hypotheses regarding the contextual determinants of increased adoption of participative practices in organizations. It also investigated whether environmental and organizational characteristics mediate the adoption patterns for two different type of participative innovations, namely, employee participation groups and self-managing teams that differed in their level of complexity.

In line with March's (1981) thesis that change is a complex interplay of multiple factors, support was found for several complementary explanations of adoption behavior. This evidence also adds to the recent body of findings that administrative innovation adoption behavior stems from multiple bases, both technical and non-technical (Burns & Wholey, 1993; Palmer et al., 1993).

In partial support of theories of rational organizational adaptation, environmental decline was positively associated with increased adoption of participative practices (hypothesis 2a) and so was firm downsizing (hypotheses 5a and 5c) which as a concept is closely linked to environmental decline. From an information processing perspective, size was negatively related to innovation adoption behavior, but this was contrary to our predictions (hypothesis 3b). However, this finding is of interest and we will refer to it subsequently. We also found partial support for theories of firm resources and

capabilities. Profitability was related to adoption of participative practices and employee participation groups (hypotheses 6a and 6b). However, we did not find any support for slack resources, which parallels recent findings that slack is unrelated to adoption behavior, but profitability is (Bolton, 1993; Burns & Wholey, 1993). On the contrary, the findings can also be an artifact of the way slack was computed. We found no evidence for any of the technology and structure hypotheses (hypotheses 12a, 12b, 12c and hypotheses 13a, 13b, and 13c). Again, the lack of findings can be an artifact of the measures employed. Higher level of unionization was negatively related to increased adoption of self-managing teams (hypothesis 15), that supports theories of organizational power and politics that powerful coalitions within organizations tend to resist major intrusions on their power base (Lammers, 1975). Increases in level of professionalization was positively related to increased utilization of self-managing teams (hypothesis 20b) in support of arguments that professional cultures are more open to complex, radical innovations, that extend them more control over their work activities (Miller, 1967). Finally, we found strong evidence for institutional explanations of innovation adoption (Meyer & Rowan, 1977). Hypotheses 22a, 22b, and 22c that argued for higher adoption patterns in the manufacturing sector, due to higher cumulative levels of adoption, was supported. Similarly, support was found for intra-organizational institutional effects (hypotheses 23, 24, and 25).

There are several broader implications of the study some of which emerge from the interactions between environmental and organizational characteristics and the characteristics of the innovation.

A very interesting finding is that organizations tend to increase participative practices when facing conditions of environmental decline. In addition, firm downsizing is also positively associated with participative practices and self-managing teams. These two findings are of major import since they challenge a large body of research that argues for threat-rigidity effects as a consistent pattern during decline (Staw et al., 1981).

In effect, these findings extend empirical evidence for an emergent trend among organizations that has been so far discussed only at theoretical and anecdotal levels by scholars (Daft & Lewin, 1993; Galbraith & Lawler, 1993). The fact that our sample included companies from several industries and is based on recent data (1990 to 1993) adds to the strength of these findings. Organizations today exist in hyper-turbulent, hyper-competitive environments, where rapid shifts in environmental conditions are more the rule than the exception. Managers are clearly recognizing that change is a way of life and responding in new and inventive ways. There is increased awareness that the design of the organization itself is the new strategic variable (Daft & Lewin, 1993; Galbraith & Lawler, 1993).

A second finding that feeds into an emergent pattern is the effects of size on innovation adoption. Traditionally, size has been assumed to be a fixed part of organizational patterns. It was associated with predictable changes in structure and design (Daft & Lewin, 1993) with linear relationships posited between size and adoption of innovations (Burns & Wholey, 1993; Palmer et al., 1993). However, findings from these two previous studies suggest that size effects diminish with the maturity of [administrative] innovations. The negative relationship we found between size and increased adoption of employee participation groups adds to this perspective by extending the possibility that the relationship between size and the maturity of an innovation can take the form of an inverted- U relationship.

Another finding that warrants discussion is the positive relationship between high firm performance and increased adoption of participative practices, and employee participation groups. These results have a direct bearing on, and support Bolton's (1993) thesis and findings that the relationship between varying levels of performance and innovation adoption is simply not an 'either/or' issue as has been traditionally conceived by researchers in the field (Miles & Cameron, 1982; Hambrick & Snow, 1977). Poor

performers adopt early, while successful performers are risk averse and delay action until an innovation becomes commonplace.

The finding that higher levels of unionization are negatively related to increased adoption of self-managing teams contradict McMahan and Lawler's (1994) conclusions that unionization is not related to adoption of employee involvement. However, their inference was broader in scope and related to employee involvement practices overall, a conclusion we found support for. A broader implication of this finding is that organizations with a strong union presence may want to involve the union in employee involvement efforts, particularly if they are planning to introduce self-managing teams.

The positive relationship between increases in level of professionalization and increased adoption of self-managing teams signifies a marriage between two emergent trends in the world of work. Organizations are becoming increasingly knowledge intensive (Starbuck, 1992) and self-organizing (Daft & Lewin, 1993). Problems are identified and solved at multiple levels via radical new processes of delegation, or formal structures such as self-managing teams.

As evidenced in earlier studies of innovation adoption, institutional processes both at the intra-firm and inter-firm level are a strong predictor of increased adoption of participative practices. This is not surprising given the tight interlinks within and between organizations (Daft & Lewin, 1993). Computer mediated communication technology is becoming the backbone of many organizations where all sorts of information is widely disseminated and freely available in these 'virtual electronic organizational networks'. Likewise, organizations are increasingly collaborating with each other in order to create strategic alliances and other form of interdependencies to manage a hyper-competitive, hyper-turbulent world. Boundaries among organizations are blurring as hundreds of interorganizational connections and joint ventures are created everyday (Galbraith & Lawler, 1993).

In sum, many of the findings of the study reflect the realities of a period where the traditional logic of organizing and organizations are going through fundamental revolutions (Galbraith & Lawler, 1993) and therefore warrant extended research in the future. In particular, the relationships between environmental decline, downsizing, and participative practices, size effects and the maturity of an innovation, and firm profitability and innovation adoption behavior suggest future areas of investigation.

One major weakness of the study was that the sample was drawn from some of the largest firms in the U.S. and may not apply directly to smaller employers. Two major strengths of the study is that the sample covers a wide range of industries and the data pertains to a contemporary period (1990 to 1993).

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TABLE 1
Change in Utilization of Participative Practices

Variables	Means	Std. Dev.	Paired T-Value
Overall Participative Practice Level			
1993	2.88	.89	
1990	2.57	.86	
Difference	.31	.92	3.59***
Suggestion System			
1993	3.48	2.04	
1990	3.70	2.21	
Differences	-.22	2.57	-.96
Survey Feedback			
1993	4.34	2.17	
1990	3.35	2.07	
Difference	.98	2.48	4.49***
Job Design / Enrichment			
1993	2.67	1.36	
1990	2.33	.94	
Difference	.34	1.45	2.63**
Quality Circles			
1993	2.33	1.39	
1990	2.33	1.35	
Difference	0	1.63	.00
Employee Participative Groups (NQL)			
1993	3.31	1.45	
1990	3.06	1.40	
Difference	.25	1.78	1.54
Mini-Business Units			
1993	1.86	1.12	
1990	1.44	.85	
Difference	.43	1.26	3.79***
Self-Managing Teams			
1993	2.08	.93	
1990	1.67	.82	
Difference	.41	.83	5.56***

n = 130
 *** p ≤ .001
 ** p ≤ .01
 * p ≤ .05

TABLE 2
Means, Standard Deviations, and Correlations

Independent Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1993 Overall participative practice level	2.87	0.89	1.00																				
2 1993 Self-managing team practice level	2.09	0.95	.53***	1.00																			
3 1993 Participation group practice level	3.30	1.45	.65***	.31***	1.00																		
4 1990 Size	29,438	41,023	.08	.09	-.12	1.00																	
5 1990 Level of unionization	33.59	33.90	-.02	-.07	.05	.18	1.00																
6 1990 Level of professionalization	24.85	15.57	-.05	-.06	-.09	.04	-.43***	1.00															
7 Industry type (Manufacturing vs Service)	0.40	0.49	-.28***	-.45***	-.35***	-.09	-.06	-.11	1.00														
8 Average capital intensity	217,509	328,272	-.10	-.09	-.04	-.15	.33***	-.01	.23**	1.00													
9 Average profitability	0.34	1.90	.25	.01	.27	-.06	.00	-.07	-.08	-.02	1.00												
10 Average slack resources	0.26	0.20	-.05	-.07	-.24	.14	-.06	.08	.33***	-.11	-.11	1.00											
11 Environmental munificence/scarcity	0.05	0.09	-.18	-.06	-.06	-.07	-.18*	.31***	-.01	.27	-.08	-.04	1.00										
12 Environmental competitive pressure	0.05	0.07	-.09	-.04	.00	-.05	-.16	.30***	-.02	.18*	-.04	-.11	.82***	1.00									
13 Percent change in size	0.02	0.43	-.25	-.30***	-.13	-.20	-.19	-.07	.22	-.19*	.00	.00	-.20	-.17	1.00								
14 Percent change in level of unionization	-0.03	0.19	.05	.00	.06	-.20	-.36***	.11	-.02	-.06	.00	.09	.04	.10	.15	1.00							
15 Percent change in level of professionalization	0.09	0.14	.19	.23	.17	-.12	.08	-.40***	.01	.07	.05	.02	-.27	-.32***	.10	-.14	1.00						
16 Percent change in capital intensity	1.19	11.88	-.05	-.02	-.09	-.03	-.09	.09	.12	-.05	-.02	.03	-.04	-.06	-.05	.01	-.02	1.00					
17 Percent change in profitability	-0.95	7.47	.00	.02	.00	.06	-.06	.18	.05	.06	.08	.04	.03	.02	.00	.01	-.04	.01	1.00				
18 Percent change in slack resources	0.05	0.12	-.11	-.12	.01	-.02	.18	-.06	.13	.36***	.00	-.04	-.06	-.58	-.12	-.15	-.14	-.04	-.15	1.00			
19 1990 Overall participative practice level	2.57	0.86	.40***	.35***	.26	.31***	-.08	-.10	-.13	-.21	.08	.09	-.10	-.13	-.09	-.06	.12	-.03	.13	-.14	1.00		
20 1990 Self-managing team practice level	1.66	0.82	.28	.56***	.27	.04	.02	-.03	-.38***	-.11	-.06	-.14	-.19*	-.18*	-.04	.04	.06	-.08	.08	-.14	.46***	1.00	
21 1990 Participation group practice level	3.05	1.40	.36***	.27	.23**	.17	.09	-.19	-.11	-.08	.00	.14	-.16	-.16	-.05	-.01	.14	-.07	.06	-.12	.63***	.27	1.00

Significant Correlations: *** $p < .001$, ** $p < .01$, * $p < .05$

TABLE 3
Results of Linear Regression Analyses for
1993 Overall Participative Practices Level

Independent Variables	Model 1		Model 2		Model 3	
	β	t	β	t	β	t
1990 Overall participative practice level	.35	4.52***	.34	4.29***	.32	4.23***
Industry type	-.22	-2.79**	-.20	-2.50**	-.18	-2.37**
1990 Size	-.07	-.92			-.09	-1.05
1990 Level of unionization	-.01	-.09			-.07	-.95
1990 Level of professionalization	-.03	-.33			.01	.165
Average capital intensity	.03	.338			.03	.36
Average profitability	.20	2.56***			.19	2.52**
Average slack resources	.01	.10			-.01	-.11
Environmental munificence / scarcity			-.18	-2.27*	-.16	-2.12*
Percent change in size			-.19	-2.41**	-.19	-2.48**
Percent change in level of unionization			.10	1.31	.11	1.33
Percent change in level of professionalization			.12	1.44	.11	1.41
Percent change in capital intensity			-.03	-.40	-.03	-.38
Percent change in profitability			-.03	-.44	-.05	-.64
Percent change in slack resources			-.07	-.92	-.08	1.06
R^2		.25		.26		.30
F		13.87***		11.21***		10.61***

*** p \leq .001

** p \leq .01

* p \leq .05

TABLE 4
Results of Linear Regression Analyses for
1993 Employee Participation Group Practice Level

Independent Variables	Model 1		Model 2		Model 3	
	β	t	β	t	β	t
1990 Employee participation group practice level	.22	2.71***	.19	2.31*	.22	2.71***
Industry type	-.32	-4.04***	-.33	-3.96***	-.32	-4.04***
1990 Size	-.17	-2.10*			-.17	-2.10*
1990 Level of unionization	.04	.56			.04	.56
1990 Level of professionalization	-.06	-.77			-.06	-.77
Average capital intensity	.03	.36			.03	.36
Average profitability	.22	2.83**			.22	2.83**
Average slack resources	-.14	-1.60			-.14	-1.60
Environmental munificence / scarcity			-.03	-.39	-.02	-.28
Percent change in size			-.05	-.59	-.09	-1.08
Percent change in level of unionization			.06	.68	.03	.30
Percent change in level of professionalization			.13	1.62	.10	1.26
Percent change in capital intensity			-.03	-.38	-.03	-.40
Percent change in profitability			.01	.04	-.01	-.07
Percent change in slack resources			.08	.93	.08	.98
R^2	.24		.16		.24	
F	9.64***		11.67***		9.64***	

*** p \leq .001

** p \leq .01

* p \leq .05

TABLE 5
Results of Linear Regression Analyses for
1993 Self-Managing Team Practice Level

Independent Variables	Model 1		Model 2		Model 3	
	β	t	β	t	β	t
1990 Self managing team practice level	.40	5.19***	.44	6.21***	.44	6.31***
1990 Employee participation group practice level	.12	1.70+	.10	1.46	.12	1.70+
Industry type	-.30	4.00***			-.23	-3.25***
1990 Size	.06	.85			.05	.76
1990 Level of unionization	-.15	-1.95*			-.15	-2.26*
1990 Level of professionalization	-.11	-1.53			-.10	-1.29
Average capital intensity	-.08	-1.06			-.01	-.10
Average profitability	-1.88 E(4) ^b	-.003			.01	.07
Average slack resources	.07	.95			.05	.78
Environmental munificence / scarcity			.03	.46	.01	.07
Percent change in size			-.23	-3.44***	-.26	-3.85***
Percent change in level of unionization			-.04	-.59	-.01	-.16
Percent change in level of professionalization			.21	3.12***	.22	3.37***
Percent change in capital intensity			.04	.64	.03	.44
Percent change in profitability			-.01	-.03	.01	.06
Percent change in slack resources			-.07	-1.10	-.06	-.86
R^2		.41		.46		.48
F		17.04***		26.21***		22.68***

*** p \leq .001

** p \leq .01

* p \leq .05

+ p \leq .10

^b E(m) refers to the number of places to the left of the decimal that marks the true coefficient.

APPENDIX 1

Description of Participative Practices

1. **Suggestion system:** A program that elicits individual employee suggestions on improving work or the work environment.
2. **Survey feedback:** Use of employee attitude survey results, not simply as an employee opinion poll, but rather as part of a larger problem solving process in which survey data are used to encourage, structure, and measure the effectiveness of employee participation.
3. **Job enrichment or redesign:** Design of work that is intended to increase worker performance and job satisfaction by increasing skill variety, autonomy, significance and identity of the task, and performance feedback.
4. **Quality circles:** Structured type of employee participation groups in which groups of volunteers from a particular work area meet regularly to identify and suggest improvements to work-related problems. The goals of QCs are improved quality and productivity, there are no direct rewards for circle activity, group problem solving training is provided, and the groups' only power is to suggest changes to management.
5. **Employee participation groups other than quality circles:** Any employee participation groups, such as task teams or employee work councils, that do not fall within the definitions of either self-managing work teams or quality circles.
6. **Mini-business units:** Relatively small, self-contained organizational unit (perhaps smaller than the plant level) that produces its own product of service and operates in a decentralized, partly autonomous fashion as a small business.
7. **Self-managing work teams:** Also termed autonomous work groups, semi-autonomous work groups, self-regulating work teams, or simply work teams. The work group (in some cases, acting without a supervisor) is responsible for a whole product or service, and makes decisions about task assignments and work methods. The team may be responsible for its own support services such as maintenance, purchasing, and quality control and may perform certain personnel functions such as hiring and firing team members and determining pay increases.

APPENDIX 2**• FORTUNE SERVICE INDUSTRY CATEGORIES**

- 1) Commercial Banking
- 2) Diversified Financial
- 3) Savings Institutions
- 4) Life Insurance
- 5) Retailing
- 6) Diversified Service
- 7) Transportation
- 8) Utilities

• FORTUNE MANUFACTURING INDUSTRY CATEGORIES

- 1) Aerospace
- 2) Apparel
- 3) Beverages
- 4) Building Materials
- 5) Chemicals
- 6) Computers (includes office equipment)
- 7) Electronics
- 8) Food
- 9) Forest Products
- 10) Furniture
- 11) Industrial and Farm Equipment
- 12) Jewelry, Silverware
- 13) Leather
- 14) Metal Products
- 15) Metals
- 16) Mining, Crude-Oil Production
- 17) Motor Vehicles and Parts
- 18) Petroleum Refining
- 19) Pharmaceuticals
- 20) Publishing, Printing
- 21) Rubber Products
- 22) Scientific and Photographic Equipment
- 23) Soaps, Cosmetics
- 24) Textiles
- 25) Tobacco
- 26) Toys, Sporting Goods
- 27) Transportation Equipment