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ABSTRACT

Results of research on predictors of organizational responses to declining enrollments at 56 small to medium-sized colleges and universities are discussed. Decline was experienced from 1978-1979 to 1981-1982. Severity of decline was selected as an objective predictor of organizational response, while internal agreement on mission and attributions of cause, controllability, and stability of decline were selected as subjective predictors of response. Two types of responses were examined: those that emphasize efficiency (operating responses) and those that represent a change in product/market mix (strategic responses). Path analysis indicated that severity of decline was not directly related to the types of responses that the organizations take following a period of decline. Instead, agreement on mission had a direct negative effect on both operating and strategic types of responses, and this effect increased as the result of the mediating perceptual variables of control and stability. Perceived cause of decline and other perceptual variables were useful in predicting types of response. Comparing subject and objective predictors of responses to decline revealed that agreement on mission is a better predictor of response than is severity of decline. Implications for future research are offered. Five pages of references are included. (SW)

PREDICTORS OF ORGANIZATIONAL RESPONSES TO DECLINE

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Table of Contents

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Summary and Results

This report discusses the results from a research project designed to examine predictors of organizational responses to decline. A review of research on declining organizations suggests there are two primary approaches to work in this field: the contingency approach and the strategic choice approach. The contingency approach assumes that organizations and the individuals within them are rational actors in an environment largely determined by external events. The research emphasis is on identifying objective measures of external environment that predict organizational response to decline. The strategic choice approach rejects environmental determinacy, arguing for the role organizational members play in shaping future events by present choices. Because of the role individuals are believed to play in shaping the organization, the strategic choice perspective recommends predicting response to decline on the basis of the extent to which there is internal agreement on mission and how organizational actors perceive dimensions of decline.

For this study, severity of decline was selected as an objective predictor of organizational response, while internal agreement on mission and attributions of cause, controllability, and stability of decline were selected as subjective predictors of response. Responses examined were of two types: those that emphasize efficiency (operating responses), and those that represent a change in product/market mix (strategic responses).

The sample was 56 small- to medium-sized institutions of higher education that had experienced enrollment decline from 1978-79 to 1981-82.

Results

A path analysis indicates that severity of decline is not directly related to the types of responses the sample organizations take following a period of decline. Instead, severity of decline directly affects perceptions, and it is perceptions that cause organizations to take action. Similarly, agreement on mission has a direct negative effect on both operating and strategic types of responses, and this effect increases as the result of the mediating perceptual variables of control and stability. Perceived cause of decline and other perceptual variables are useful in predicting types of organizational response to decline. A comparison of subjective and objective predictors of responses to decline reveals that agreement on mission is a better predictor of response than is the severity of decline.

These findings suggest that contingency-based studies of decline may examine variables that are poor predictors of organizational response to decline. They omit crucial perceptual variables, which are useful predictors of the responses organizations make following a period of decline. The centrality of perceptual variables is consistent with a pattern of Organizational Studies Division findings that suggests internal conditions are important for predicting an organization's strategy

(Chaffee, 1984; Chaffee and Krakower, 1984). Findings pertinent to this study also provide additional support for examining perceptual variables when the organization is experiencing stress.

Future research efforts may provide a link between these findings and longer term outcomes. While it is clear from this study that perceptual variables affect actions organizations pursue under conditions of decline, it is not clear what affect those actions have on recovery from decline.

PREDICTORS OF ORGANIZATIONAL RESPONSES TO DECLINE

I. INTRODUCTION

Overview of the Study

Two different streams of thought have emerged from studies of organizational decline: the contingency approach and the strategic choice approach. The contingency approach emphasizes environmental determinancy in shaping organizational outcomes, objective indicators of decline as the primary variable of interest in predicting organizational responses, and views managers as reactive in that their choices are constrained by the external environment. Successful recovery is believed to depend on the manager making a right choice given the contingencies of a particular decline situation. The research emphasis has been on discovering the types of responses appropriate for different types of decline situations (Hambrick & Schecter, 1983; Hofer, 1980).

Strategic choice research, on the other hand, examines the interplay between the organization and its external environment, with emphasis on the organization's ability to enact its own environment through its choice of organizational responses. Managerial perception of the decline situation is believed to be a major subjective factor that predicts choice. The notion of choice suggests that there are a variety of viable alternatives available as responses to decline, and that the success of any one

is not predetermined but rather enacted by organizational participants (Chaffee, 1984; Ford, 1984). A comparative examination of these two perspectives can shed light on the relative impact of external and internal variables in shaping institutional responses to decline.

The primary aim of this study is to develop a theoretical framework that encompasses the characteristics of both the contingency and strategic choice perspectives. Examination of studies from both perspectives leads to identification of the major components of each, which can then be used to develop a causal model to test their relative ability to explain organizational responses to decline.

The Contingency and Strategic Choice Approaches

The published literature focuses on two distinguishable perspectives on organizational decline. The first, which is evident more often implicitly than explicitly, is a contingency approach to organizations. Most of the work consists of post hoc empirical studies matching variables that make an organization more or less susceptible to decline with responses that make an organization more or less able to recover from decline.

Among those variables believed to contribute to susceptibility are the nature of the competitive environment (Harrigan, 1983; Harrigan and Porter, 1983), type of organization or industry (Hamermesh & Silk, 1979; Hambrick & Schecter, 1983), or environmental conditions (Hughes, 1982; Zammuto, 1983a;

Zammuto, Whetten, & Cameron, 1983; Zammuto & Cameron, 1985). Among suggested recovery options are to alter organization efficiency (Hofer, 1980; Hambrick & Schecter, 1983) or improve the organization's position relative to the environment (Harrigan & Porter, 1983; Hamermesh & Silk, 1979; Zammuto & Cameron, 1985). Contingency management is largely reactive (Astley & Van de Ven, 1983), and under conditions of decline includes two steps: 1) identify relevant decline conditions and response alternatives, and 2) select the response appropriate to specific conditions. Because the research is post hoc, success in recovery from decline is generally attributed to having made right choices relative to decline conditions and response alternatives, while organizational failure or continuing decline would suggest the wrong choices were made. Because of the emphasis on right or wrong choices, and the belief that these choices are objectively determined, the contingency view implies that decision makers have access to complete information and will make rational choices to select from among response alternatives.

A competing point of view is that organizational dynamics play a significant role in interpreting the decline experience (Fottler & Smith, 1982; Greenhalgh, 1984; Miller, 1977; Rubin, 1979; Smart & Vertinsky, 1977; Starbuck, Greve, & Hedberg, 1978), and that these interpretations, rather than the stimuli themselves, play a profound role in determining organizational responses to decline. Interpretations are not believed to be based on either perfect information or rational choices, but

rather are subject to self-interest and bounded rationality (March & Simon, 1958).

Furthermore, it is believed that under the conditions of stress associated with organizational crisis, both self-interest and bounded rationality increase and adversely affect the accuracy of decision makers' perceptions of the problem situation. Some of these effects are drawing conclusions more quickly than the evidence would warrant (Holsti, 1978), filtering information to define the crisis consistent with past experiences (Staw, Sandelands, & Dutton, 1981), and defining the crisis in overly simple, single-dimensional terms (Holsti, 1978). In effect, decline conditions can generate an atmosphere of crisis and stress that reduces the efficiency of information processing. Therefore, this view suggests that an appropriate framework for describing the decline process includes decision maker perceptions as a critical intervening variable between conditions of and responses to decline.

Statement of the Problem

An issue that remains to be answered by research is the extent to which the contingency and strategic choice views accurately describe the response process. The fact that these views have not been compared empirically encourages dual streams of research, despite the fact that there is no evidence on the relative merit of either. A viable research approach is to examine the two streams of research in order to identify variables

appropriate to specification of a causal model of organizational decline that compares the two views. This type of research is valuable in that it provides a comparative framework within which the relative merits of each perspective on decline can be evaluated.

A major characteristic distinguishing between the streams of research is management's role in the response process. The contingency view is set within a framework bounded on one side by environmental exigencies and on the other by response alternatives; research focuses on identifying decline types and the responses believed consistent with each type. The value of this research is presumed to be that, once identified, the universe of decline types and response types provides the information managers need to identify the fit consistent for their own organizational decline experience.

The manager is viewed as a mechanic in the response process, and what is correct or incorrect choice is determined by decline type and appropriate responses. The notion that success or failure of a particular choice is determined by factors external to the organization suggests that managerial choice is severely limited. This in fact is the attraction of the contingency perspective on decline; knowing the contingencies of a particular situation is what makes it possible for managers to make a right choice and avoid a wrong one. The focus of research is not on the manager, nor on how he or she evaluates the characteristics of decline, but rather on the determinancy of the relationship

between the nature of the decline situation and subsequent response alternatives. This suggests that there is a direct causal link between the stimulus of decline and the response alternative, in which management's role is selecting a choice, but without reference to how the choice is shaped internally

The strategic choice view is that organization managers respond to indications of decline first by interpreting the causes of decline, and that these interpretations shape responses. The focus in this stream of research is on perceptions of decline and other characteristics of internal organization that may serve to shape response alternatives. It is assumed that, once identified, perceptions associated with managing the decline process can be evaluated in order to achieve congruence between perceptions held and perceptions needed to direct organizational energy in response to decline. While the contingency literature focuses on identifying types of decline and types of responses, the strategic choice literature focuses on identifying internal perceptual processes relevant to managing of decline. However, little empirical work is available to indicate how perceptions mediate responses to decline. A purpose of this study is to examine empirically the role of perceptions in causing types of responses to decline.

A framework that has been used to identify decision makers' perceptions of decline was developed by Weiner (1979) in order to study individual attribution of cause, but also has been used to study perceptions of decline at the organizational level of

analysis (Bettman & Weitz, 1984; Ford, 1984; Salancik & Meindl, 1984; Staw, McKechnie, & Puffer, 1983). The framework encompasses three dimensions of attribution that are believed to test internal perceptions of decline: perceived stability of decline (i.e., whether decline is believed to be temporary or permanent); perceived controllability; and perceived locus of cause. Support for the three dimensions of causal attribution when tested at both the individual and organizational levels suggest that this is a robust framework for measuring perceptions of organizational decline (Bettman & Weitz, 1984; Weiner, 1979).

Another variable believed to be causally related to responses to decline is perceived agreement on organizational goals (Chaffee, 1984; Chaffee & Krakower, 1983). The perception of agreement on goals or organizational mission is consistent with the literature on organizational culture that suggests a shared mission is essential to directing organizational choice (Deal & Kennedy, 1982; Peters & Waterman, 1982). It is assumed here that internal agreement on mission is a perceptual variable that develops either prior to or concurrent with the decline experience and that then affects perceptions of decline as well as causes organizational responses. In other words, a strong perceived sense of mission is believed to have both a direct and an indirect causal relationship with responses to decline.

The role of management consistent with strategic choice is not that of mechanic fine-tuning the instrument, but rather that of inventor who creates the instrument. Like the contingency

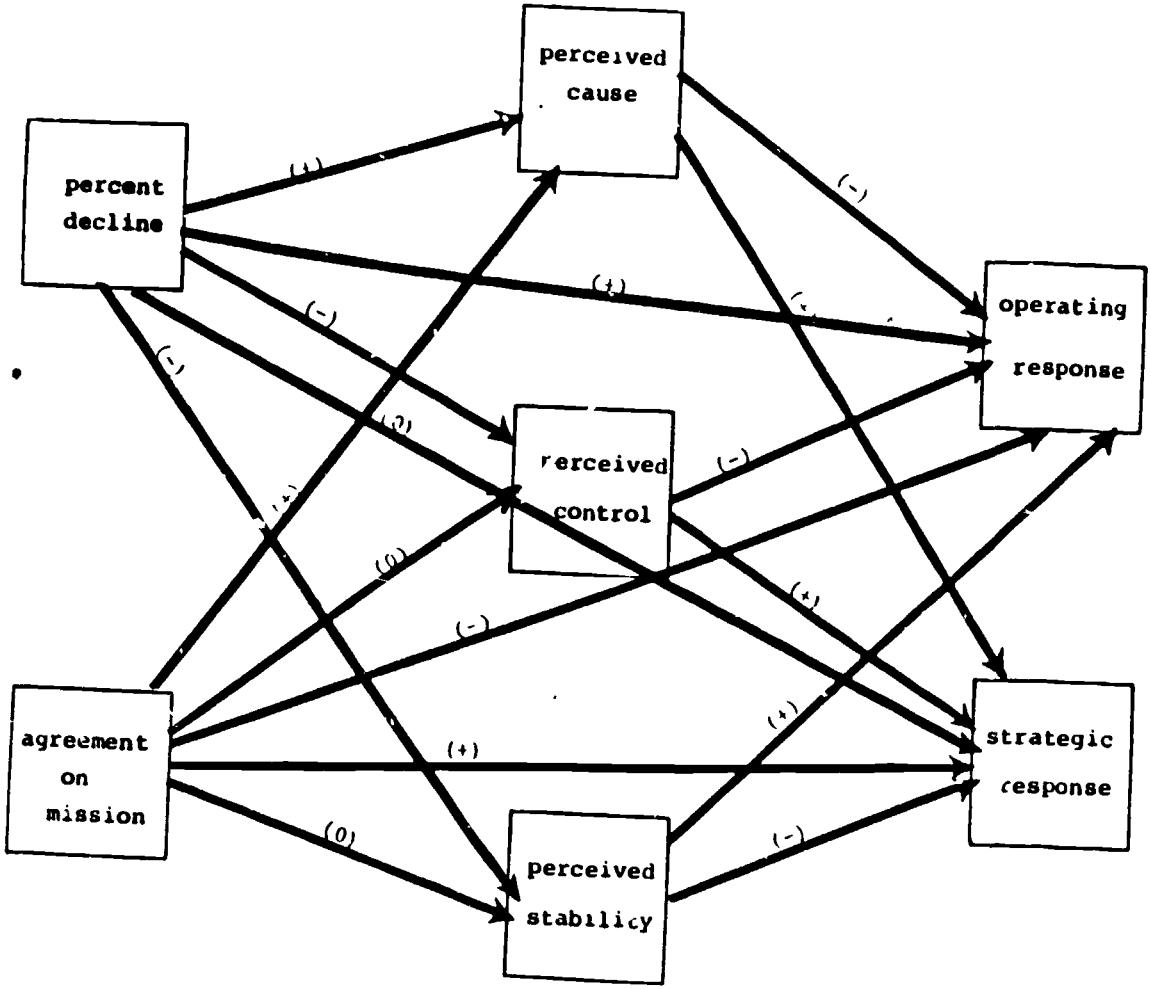
view, this view suggests that decline stimuli exist and cause an organization to respond, but here response is believed to be mediated by internal perception. Therefore, one causal link suggested by the strategic choice literature is stimulus leading to perceptions of decline that then cause response. A second causal path suggested by the strategic choice perspective originates with internal agreement on mission. This variable is believed to be an independent or exogenous variable not caused by other factors in the model, which itself is a cause of both perceptions of decline and responses to decline. A comprehensive version of the strategic choice model as described thus far can be visually represented by Figure 1. Arrows in Figure 1 indicate the hypothesized directions of causal relationships, while the signs contained within parentheses indicate the hypothesized direction of these relationships. As may be evident, the strategic choice model shares characteristics with the contingency model, differing only because it introduces perceptual variables as causes of responses to decline.

This conceptual model of decline encompasses key elements of the decline process suggested by each stream of research. The direct paths between the severity of decline and responses to decline reflect the contingency perspective on decline while all other paths reflect the strategic choice perspective. Development of this model is based on variables drawn from the competing theories used to describe the process of organizational decline. In the following description of research methodology, the

hypothesized relationships are described within the context of existing literature on organizational response to decline.

Figure 1

Hypothesized Directions of Causal Relationships



II. RESEARCH METHOD

Introduction

The following description of the research method includes a rationale for using causal modeling to answer the research questions, a description of the sample, data collection, operationalization of variables, propositions to be tested, and possible outcomes and limitations of the empirical test.

Purpose of a Causal Model

Causal modeling is a confirmatory technique most often used to test the fit between a theoretical model and empirical data. As Kenney (1979) points out, the first and most important characteristic of a causal model is that it be based on a strong underlying theory that provides guidance for specifying causal relationships. Evidence of competing perspectives represented in the decline literature makes causal modeling a particularly appropriate technique for comparing the attributes of each perspective.

The assumptions to be met in a causal model are not unlike those required for correlation: there must be covariation between variables, temporal ordering, and the identification of other factors that may be producing the relationship between two variables (Asher, 1983). The distinct advantage a causal model provides is that it requires a researcher to make theory explicit

and order the directionality of cause using multivariate regression techniques.

Definition of the problem suggests a need for two types of data: objective indicators as measures of decline and strategic response to decline, and perceptual data on attribution dimensions and internal agreement on mission. Moreover, the proposed project demands a large data set to assure a rigorous test of the model. All three of these requirements are met with data on higher education institutions collected by the Organizational Studies Division and held at the National Center for Higher Education Management Systems (NCHEMS).

Instruments

Perceptual variables for internal agreement on mission, and internal attribution for cause, stability, and controllability of decline are represented by items selected from the Assessment of the Performance of Colleges and Universities (APCU) survey. The APCU survey is a 183 item questionnaire developed by the National Center for Higher Education Management Systems for the purpose of examining a variety of participant perceptions in institutions of higher education. These perceptions are related to organizational performance and actions, strategy, changes in the institution's external environment, decreasing enrollments and revenues, institutional characteristics and type, and internal decision processes. This questionnaire was field tested, revised, and administered to members of the dominant coalitions at the 334

institutions of higher education that constitute the larger sample.

Institutional participation was initially approved by the president of the organization. APCU surveys were then sent to 4-5 top administrators and to 4-5 faculty representatives selected randomly from among lists of academic department heads provided by the institution. Administrators and faculty were chosen as the focal groups because of the expectation that their positions in the institutions were central to the decision making process.

At the same time that perceptual data were collected, a Supplemental Objective Data instrument (SOD) was mailed to institutional research officers at the institutions asking them to indicate whether specific events or activities had been undertaken at the institution between 1978 and the time of the survey. These events were all actions that higher education organizations were likely to use in response to declining enrollments and/or revenues (Mingle, 1982). The questionnaire itself asked respondents to "indicate whether each of the following events has occurred here since the 1978-79 academic year." The SOD contained 35 items for which respondents circled a "yes" or "no" answer as to whether the action had been taken. The events listed were of two types: 25 that were largely oriented toward efficiency actions (e.g., cut the library budget, restrict travel, telephone and supply purchases), and 10 that were largely oriented toward altering the nature of the enterprise (e.g., develop or increase the number of

continuing education courses). One efficiency option elicited no positive responses and was dropped from the analysis.

While the response data is self-reported and might therefore be subject to the problems associated with bias or reactivity, these threats are reduced because answers were not based on perception but on fact. The respondents were in a good position as institutional research officers to know the answers, knew the purpose of the questions, and were encouraged to view their responses as important in reflecting an accurate picture of the institution. All of these factors are suggested by Emory (1980) as ways to elicit adequate and accurate responses to questions of fact.

Sample

The sample for this analysis is 56 institutions of higher education that experienced declining enrollments between 1978-79 and 1981-82 at which individuals responded to both the APCU and SOD surveys. The decline sample is part of a larger sample of 334 organizations drawn from all institutions of higher education listed in the Higher Education General Information Survey (HEGIS) data base that had at least a four-year educational program and enrollments of between 200-20,000 students in 1981-82 (N=1317). The population was stratified to produce a maximally diverse sample representative of four variables: size, control (public versus private), net change in enrollment from 1979 to 1982, and four year only institutions versus those with graduate programs.

Organizations experiencing decline, as represented by a decrease in enrollment from 1979 to 1982, were deliberately overrepresented in the sample. Overall, the sample is representative of the population within the limits set by the selection criteria. The stratification of population produced 334 potential institutional participants; all institutions invited to participate in the survey did respond with at least five completed and returned questionnaires.

Overall response rate for the sample of 334 institutions was 70.6% for administrators and 61.9% for faculty respondents. This response rate is somewhat better than the 40-50% response rate typical for surveys of this sort (Kerlinger, 1972). Within the decline sample, the number of administrators responding was 224, faculty produced 196 responses. A MANOVA test of differences between the two groups on perceptual variables revealed no significant differences.

A total of 79 institutions in the sample of 334 colleges and universities experienced declining enrollments between 1979 and 1982. Among those institutions were 21 that had not returned the SOD survey; these organizations are not included in the sample of 56. Additionally, the decline sample included few large organizations under either public or private control (n=13). Four of these large organizations were dropped from consideration because they had not provided information on institutional actions. The small number of remaining large organizations left in the sample suggested that the decline sample was most

representative of small to medium sized institutions, and as a result a decision was made to concentrate on these types of organizations. Therefore, large organizations experiencing decline were dropped from further consideration.

This sample is fairly homogenous according to type of institution. Using the NCHEMS institutional classification system, only one institution in the sample is a major doctoral institution, while only four are speciality types of institutions (e.g., business, divinity, teacher preparatory schools). The remainder of the sample is fairly evenly divided between comprehensive type institutions (n=26), and general baccalaureate granting institutions (n=25), suggesting that the sample is evenly divided between generalist and specialist types of organizations (Zammuto, 1984b).

The study sample also is balanced in terms of institutional control and enrollment size. With respect to institutional control, 41% of the sample were public institutions and 59% were private institutions. With respect to enrollment size, 61% of the sample had FTE enrollments between 200 and 2,500 students and 39% had FTE enrollments between 2,501 and 10,000 students.

Variables

Enrollment Decline. The severity of enrollment decline is represented by the percentage decrease in total enrollment measured from 1978-79 to 1981-82. The four year period chosen for decline is imposed by the available data but is consistent with

Schendel, Patton and Riggs' contention (1976) that time span itself must be long enough to suggest that there is a problem that requires organizational attention.

Following Zammuto (1983a), a measure of total enrollment was constructed by adding full-time student headcount and part-time equivalent for students as reported on HEGIS fall enrollment questionnaires for 1978-79 and 1981-82. A measure of the severity of enrollment decline was then derived by calculating percentage decrease from 1978-79 to 1981-82. The mean percentage decline for the sample of 56 institutions is -12%. For the sake of clarity in reporting and discussing hypotheses and results, percentage decline was reverse coded.

Institutional Response to Decline. Both within and across the contingency and strategic choice literatures on decline, there is considerable agreement on the types of general organizational responses to decline. These fall with a two cell framework suggested by Hofer (1980) as operating responses, characterized by an emphasis on efficiency, and strategic responses that involve a change in the organization's strategy for competing in the same business or that call for entering a new business or businesses.

There are several differences between the two types of responses. Operating type responses generally take little time to implement or reverse, require limited group consensus for purposes of implementation because they are within the control of managers, are efficiency-oriented, and typically represent normal types of change. In contrast, strategic types of responses usually require

consensus and time to implement, and as a result are more difficult to reverse than operating responses. Moreover, the organization-wide nature of strategic change may require resource expenditures rather than cost cutting, and may represent unusual or radical change.

Despite general consensus that there are two types of responses to decline, there is little agreement as to exactly which types are relevant for a particular sample. As will become evident in a discussion of how these variables have been operationalized in the current study, absence of agreement on types establishes limits for the researcher.

Operating Responses. Studies that identify an efficiency response to decline are Hamermesh and Silk (1979), Hughes (1982), Bibeault (1982), Jick and Murray (1982), Cameron (1983), Hambrick and Schecter (1983), Schendel et al., (1976), and Zammuto and Cameron (1982, 1985). Some of these studies conclude that sole use of efficiency responses to decline is associated with continued decline (Cameron, 1983; Schendel et al., 1976). Others conclude that efficiency is a short run response that works on the short run (Bibeault, 1982; Hambrick & Schecter, 1983; Zammuto, Whetten & Cameron, 1983), particularly if it keeps the organization afloat long enough to tackle survival on the long run.

The literature suggests that most organizations facing decline will respond by instituting efficiency measures (Bibeault, 1982; Bowen & Glenny, 1980; Cameron, 1983; Carter & Blanton, 1983;

Chaffee, 1984; Hambrick & Schecter, 1983; Hamermesh & Silk , 1979; Hughes, 1982; Jick & Murray, 1982; Rubin, 1977; Schendel et al., 1976; Zammuto, 1982, 1985; Zammuto et al., 1983). However, while these responses may help in the short run, they may also delay or squelch organizational recovery over the longer term. Nevertheless, the strong findings in support of an almost automatic efficiency response argues that the occurrence of decline is strongly related to an emphasis on increasing efficiency. A question raised by the two perspectives on decline is whether this path is direct from decline stimulus to operating response, or mediated by internal perceptions of decline. This is one question the causal model is intended to answer.

The literature suggests that there are several types of operating responses that an organization might be expected to pursue in the face of decline. In order to determine if an operating response was evident from results of the SOD instrument, items 1-24 were factor analyzed using a varimax rotation. One strong factor was measured by four items that accounted for 24.3% of the variance in the sample. These items and their factor loadings using exploratory factor analysis are:

1) Restrict travel, telephone, and supply purchases (.87)
2) Postpone planned equipment purchases (.72)
3) Cut library budget (.72)
4) Defer maintenance and renovation projects (.60)

All of these items are associated with cutting costs, and as such represent an efficiency response to decline. Inasmuch as cost

cutting has been confirmed as an efficiency type of response in other studies (Hambrick & Schecter, 1983; Hofer, 1980; Krakower & Zammuto, 1983), this factor was considered appropriate to represent operating response for the study. The four items measuring the operating response factor are those of interest to this study. Responses can vary from a total of 0--indicating that no operating response was taken--to 4--indicating that all operating responses were taken.

A scalogram technique was used to examine the possibility that a hierarchy of responses existed for actions taken; the results indicate that there is no hierarchy of response (Krakower & Zammuto, 1983). This suggests that there is no reason to believe that one action within this category of operating response is antecedent to another or more important in explaining any other. For this reason, each action is assumed to be an equal measure of amount of operating response reflected. Therefore, each score is reflective of how many operating responses were undertaken by each organization, ranging from least (0) to most (4).

Strategic Responses. Hofer (1980) classified strategic responses as those that either involve a change in the organization's strategy for competing in the same business or those that call for entering a new business or businesses. According to Hofer, strategic responses emphasize actions that are long-term in orientation in contrast to operating responses that are short-term in orientation.

The relative utility of long-term versus short-term strategic response to decline is not clearly delineated in the literature. Schendel and Patton's (1976) descriptions of three matched pairs of declining and recovering firms in the same industries illustrates this point. For example, Melville Shoes and SCOA were both declining firms in the shoe industry, and both adopted the same basic strategy for expansion, but the results differed. Melville experienced a turnaround while SCOA failed, due to what the authors believed was a failure in implementation. What this suggests is that strategy may be an important attribute for organizational survival, but that unlike operating responses, strategic decisions may not follow the occurrence of decline. The causal model is a test of the relationship between the severity of decline and strategic response. Evidence that this relationship is not necessarily direct suggests that the path between the severity of decline and strategic response may be nonsignificant. This is a second area the causal model can test.

A similar type of analysis was performed on the ten items believed to reflect strategic responses, i.e., responses an institution might take to reposition itself in the educational market place. One factor accounted for 46.3% of the variance and is also represented by four items. Those items and their factor loadings using exploratory factor analysis are:

1) Establish new off-campus teaching sites (.41)

2) Develop or increase courses for part-time students (.37)

3) Develop or increase the number of adult leisure courses (.59)

4) Develop or increase the number of continuing education courses (.88)

A meaningful interpretation of this factor is that it represents strategic response, i.e., a change in the organization's strategy for competing in the same business. This is reflected in expansion to reach additional markets for students. Measurement of the magnitude of strategic response is identical to that used for operating responses, ranging from 0 to represent no strategic response to 4 to represent the highest level of strategic response. Similarly, a scalogram of strategic responses failed to provide support for the possibility of a hierarchy of response (Krakower & Zammuto, 1983). As a result, each response is considered an equal measure of strategic response.

In summary, there is considerable support for dual types of response to indication of decline. Operating responses emphasizing efficiency appear to be a standard operating procedure following decline, while strategic response is less often taken in response to decline. While there appear to be benefits associated with cost reductions and other types of operating response, these benefits diminish over time. Strategic responses of both types are believed to be associated with long-term survival, but may not be a direct response to the severity of decline. However, because strategic responses often occur in tandem with operating responses, these two variables may share a relationship. This

relationship is not conceptualized as causal, but rather that there are shared factors outside those included in the model that reflect common variance. Because the relationship between types of responses is not integral to the model, the path beween disturbance terms is conceptualized as exogenous and not analyzed by the model.

Agreement on Mission. It has been argued that there is a limit to the advantages associated with efficiency measures, due in part to the fact that the organization must eventually reach a point at which additional efficiency is no longer possible, and also due in part to the possibility that certain types of operating responses reduce managerial opportunity to formulate successful long-run strategies (Zammuto, 1985). This suggests that over the long run, measures other than those related to efficiency will be employed. Those measures are strategic responses designed to position the organization against the competition by introducing new products or entering new markets with the same product, such as establishing a niche or assuming a leadership position in the market (Harrigan & Porter, 1983). It appears that high internal agreement on mission in colleges and universities is one mechanism by which institutions can achieve strategic reallocation and reconsideration of resource potential, and that agreement on mission is one means through which organizational action can be channeled (Chaffee, 1984). This point of view is illustrated by a set of studies in colleges and universities among which there is general consensus that agreement

on mission is an important element in institutional recovery from decline (Baker & Cullen, 1981; Brantley, Miller, & McAlpine, 1979; Chaffee, 1984; Finkelstein, Farrar, & Pfnister, 1984; Jonsen, 1984; Peck, 1984).

Taken together, these studies suggest that institutional agreement on mission is a strong causal factor for strategic responses to conditions of organizational decline. A test of the model can confirm or refute this expectation, as well as assist in examining the relationship between agreement on mission and operating types of responses. The literature generally suggests that agreement is more causally related to strategic response than to operating response, but that it shares a relationship with both.

The importance of agreement on mission appears to be related to the organization's ability to undertake long term solutions to problems in addition to short term responses to increase efficiency (c.f. Fottler & Smith, 1982). The long-term impact of strategic responses then suggests that internal agreement is a key causal variable in predicting strategic response. This variable is not itself caused by conditions of decline but by other internal/external factors, such as the history of the organization or type of leadership, which are not examined by the model. Therefore, in this model, agreement is conceptualized as an exogenous variable that causes type of response to decline.

The APCU survey contains four items designed to assess organizational mission. These items were factor analyzed resulting in the following factor loadings:

A1 This institution has a special identity, unlike any other in higher education. (.69)

A2 There is a general sense that this institution has a distinctive purpose to fulfill. (.97)

A3 The academic programs offered here reflect the mission of the institution.. (.81)

A4 People associated with this institution share a common definition of its mission. (.91)

In order to construct an institutional measure of agreement on mission, individual responses to each of these four items were aggregated, then averaged to arrive at a single institutional measure of mission on each item. The four items, together with three measures of controllability were analyzed using confirmatory factor analysis to identify the single strongest and most reliable measure of each construct. For agreement, the best measure was variable A2, which was reliable at .921. Because agreement on mission is believed to be a direct cause of strategic response, the causal model should indicate a strong positive relationship between mission agreement and strategic response options. Additionally, agreement on mission is also expected to be negatively related to operating response to reflect an argument that internal agreement permits limited, selective attention to number of efficiency measures pursued. In effect, internal

agreement on mission is hypothesized to be a strong causal factor for either type of institutional response to decline.

Causality. Causality is the attribution of decline either to external or to internal causes. Attribution of cause at the organizational level is believed to be consistent with robust findings for causality at the individual level (Bettman & Weitz, 1984). Organizational participants are expected to attribute poor performance to external cause but attribute good performance to their own efforts (Staw et al., 1983; Bettman & Weitz, 1984). The underlying assumption of perceived causality is that people bring ideas or knowledge about causality to bear on the situation presenting constraints (Thompson, 1967), and that in doing so they tend to overrationalize their own activities and attribute greater meaning, predictability and coupling among them than in fact they might have (Weick, 1976). The fact that individuals have preconceived notions of cause leads them to attribute meaning to events consistent with their own abilities to cope. This suggests that attribution of causality is directly linked to response, inasmuch as it perceptually filters and interprets cause before a response is taken.

Section 2 of the APCU questionnaire provides a direct measure of perceived causality. Respondents (an average of 7.7 per institution) were asked to use their best knowledge to answer "yes" or "no" to questions relating to the organization's actions in response to experience of decline on student enrollment in any year from 1978-79 to 1982-83. If the response was affirmative,

respondents were then asked to indicate the major factors they believed had caused this type of decline. Responses were coded to reflect internal causality (e.g., poor planning, deteriorating physical plant), or external causality (e.g., decreasing state support, poor economy, unfavorable demographics). Responses included those that attributed decline to a confluence of external and internal factors. These responses were few in number, and for reasons of data reduction were classified as external.

A requirement for interval level data on the cause continuum was a guide for categorizing responses on a scale in which an internal attribution of cause was assigned a -1, attributions of both external and internal cause were coded as 0, and external attribution was coded as +1. An examination of frequencies on responses reveals that within the sample of individuals 12% attributed cause to internal factors, 29% attributed cause to both internal and external factors and 59% attributed causes to external factors. These frequencies are probably reflective of the nature of enrollment decreases that are based at least in part on the fact that there is a decreasing pool of 18 to 22 year olds to attend college (U.S. Bureau of the Census, 1975). Operationalization of the causal variable takes the form of an internal/external cause score for each individual in the sample, institutional score on cause is an aggregation of individual responses.

The literature suggests that a high institutional attribution of internal cause will cause internal responses, i.e., operational

responses associated with efficiency and asset reduction. In other words, where internal cause is perceived, institutions are also expected to have made more internal adjustments as a response to decline.

Controllability and Stability. Both stability and controllability are represented by individual items taken from the APCU. Response to these items could take on a value ranging from 1=strongly disagree to 5=strongly agree on a Likert type scale. Items believed to measure both factors were examined in an exploratory factor analysis that confirmed the expectation that the items chosen represented only two factors. The three items believed to measure controllability were then subjected to a confirmatory factor analysis, and on the basis of reliability in measurements (.67), item C2 was identified as the single best measure of controllability. Measures of controllability and their factor loadings are:

C1 Major factors outside our institution that affect its enrollments have become more predictable over the past few years. (.71)

C2 Major factors outside our institution that affect its revenues have become more predictable over the past few years (.81). (The wording of this item was altered to reflect reverse coding. Original wording was "have become less predictable.")

C3 Competitive actions of other colleges and universities have become more predictable over the past few years. (.56)

Environment turbulence, such as that caused by enrollment decline, results in uncertainty for the organization (Emery & Trist, 1965). One means by which organizational leaders attempt to relieve the pressures of uncertainty is to develop a framework of assumptions about the future. While prediction may not actually improve control, it does improve decision makers' perception of control (Staw, 1980). Salancik and Meindl (1984) find that in unstable firms, managers lacking real control will attempt "to manage an illusion of control" (p. 243). It is argued here that perceived predictability is a managerial effort to demonstrate control within a turbulent environment.

Thompson (1967) suggests that organizations will try to control elements over which they can exert power. Among those elements that are believed to be subject to the exercise of managerial power are efficiency measures, e.g., reduce costs. This suggests that low perception of control over external events will have a strong causal relationship with operating types of responses, inasmuch as cost cutting is within the control of managers as an exercise demonstrating internal control.

Stability is a variable based on perceptions of the temporary or permanent nature of decline change. This factor is believed to be measured by two APCU questions with the following factor loadings:

S1 Decreasing enrollments were a short-term problem. (.42)

S2 The number of potential students from whom our institution can recruit has increased over the past few years. (.87)

A subsequent confirmatory factor analysis identified S1 as the single best measure of stability. In terms of the relationship between dimension of stability and organizational response, the model would suggest that a high attribution to temporary conditions would be positively related to operating responses (i.e., efficiency), and negatively related to more permanent types of change (i.e., competing in new markets with the existing product).

The argument for the hypothesized relationship between stability and operating responses is consistent with a broader argument reflected in this work. On the basis of the literature, operating responses are believed to occur in response to decline once that decline is perceived; this occurs without regard to type of perception. This test of the model provides the opportunity to examine this expectation to determine the relative magnitudes of the relationships between perceptions of decline and operating response.

Perceived stability is hypothesized to be a cause of strategic response. This assumption is based on an argument that when exogenous cause is perceived as permanent, organizational decision makers are likely to take actions that are proactive

(Zammuto & Cameron, 1985) or permanent in nature (Ford, 1984; Harrigan & Porter, 1983).

In summary, perceived stability, controllability, and cause are all expected to be direct causes of operating responses. This expectation is borne out in the reported experiences of institutions in decline, leading to conclusions suggesting that institutional leaders will control what they can control (Rubin, 1979), react to evidence of decline with corrective measures to return to or maintain the status quo (Smart & Vertinsky, 1984), and respond to negative outcomes caused by the crisis of decline by becoming more organized internally (Jick & Murray, 1982).

There appear to be several underlying reasons for why organizations will consistently adopt efficiency measures in the face of decline. One explanation is that operating measures to improve efficiency can be generated by reallocation of slack in some portions of the system, and that these sources of slack are within the control of management. A second pervasive notion consistent with the availability of slack and management control over it is that suggested by Chaffee and Krakower (1984) in their study of institutional response to unpredictability of resources. They argue that satisfying multiple constituents through organizational performance may be a matter of increasing the efficient use of resources because that area offers promise for visible improvement. These arguments suggest that perceptions of decline will be followed by operating responses in all cases. If, in fact, organizations do respond to decline with operating

responses, the question for this portion of the study becomes one of which dimensions of attribution are most important in causing operating responses. Path coefficients in the causal model between attribution of cause, controllability, stability and operating responses should help to answer this question.

The model has been drawn to suggest that there are relationships between all attributional variables and strategic response. On the basis of the literature it is believed that these relationships will be positive for perceived cause and controllability leading to strategic response, but that there will be a negative causal relationship between perceived stability and strategic responses. A question that remains to be answered is what other factors in addition to perceived stability are likely to contribute to strategic types of responses. The model is drawn to suggest that it is internal agreement on mission that causes strategic response. The preceding discussion can be summarized in hypothesis form as follows:

Hypothesis 1a: Severity of enrollment decline has a direct, positive relationship with operating responses to decline. The more severe the decline, the more operating responses will be pursued.

Hypothesis 1b: Severity of enrollment decline has no direct relationship with strategic responses. This path is hypothesized as zero.

Hypothesis 2a: Agreement on mission is expected to have a direct negative relationship with operating responses. This suggests that high levels of internal agreement on mission cause fewer operating responses to be taken.

Hypothesis 2b: Agreement on mission is expected to have a direct positive relationship with strategic responses. This suggests that high agreement on mission causes more strategic responses to be taken.

Hypothesis 3a: The relationship between perceived cause and operating response is negative. This suggests that more operating responses will be pursued when cause is attributed to internal sources than to external sources.

Hypothesis 3b: Strategic responses are believed to be taken in part to adapt the organization to the demands of the external environment. This suggests that more strategic responses will be pursued when cause of decline is perceived as stemming from external sources; the relationship is hypothesized as positive.

Hypothesis 4a: The less that an organization perceives itself to be in control of the decline situation, the more operating responses it will pursue. Therefore, this is a negative relationship.

Hypothesis 4b: The more control an organization attributes to itself, the more strategic responses it will pursue. This is a positive relationship.

Hypothesis 5a: A perception that decline is temporary is expected to result in temporary responses, that is, operating responses. This relationship is hypothesized as positive.

Hypothesis 5b: If decline is perceived as short term, fewer strategic responses will be pursued. Conversely, more strategic responses are expected when decline is perceived as permanent. The direction of this relationship is negative.

Hypothesis 6: Severity of enrollment decline has a positive effect on perception of cause. The more severe the decline, the greater the likelihood that cause will be attributed to external sources.

Hypothesis 7: Severity of enrollment decline has a negative effect on perception of control. The more severe the decline, the lower the perception of control.

Hypothesis 8: Severity of enrollment decline has a negative effect on perceived stability. The more severe the decline, the lower the perception that decline is a short term problem.

Hypothesis 9: Agreement on mission has a positive effect on perceived cause. The higher the sense of mission, the greater the likelihood that cause will be attributed externally.

Hypothesis 10: The literature does not indicate a linkage between agreement on mission and perception of control.

Hypothesis 11: Agreement on mission is not believed to be a direct cause of perceived stability of the decline instance. This path estimate is hypothesized as zero.

Description of the Structural Equation Model

In general, the purpose of a causal model is to use the data for estimating the unknown coefficients in a set of linear structural equations. Because each equation in the model represents a causal link, the structural equations usually do not coincide with coefficients of regression among observed variables. The use of structural equation models therefore requires statistical tools that are based on, but go beyond, conventional analysis of variance and regression statistics (Joreskog, 1983). A method for estimating unknown coefficients in linear structural equations is LISREL V.

Measures of variables will be standardized and used to generate a correlation matrix from which LISREL V solves the simultaneous equations to derive path coefficients. The structural equation model will be tested at the institutional level to determine relative goodness of fit of the data with the model. It is expected that data aggregated to the institutional level will reduce data sensitivity, but this constraint is offset by the expectation that data aggregation is more reflective of the institution than individual responses alone. Standardization of data permits comparability among path coefficients to answer some of the questions raised by this piece of research. For example,

the magnitude of the path between perceptions of cause and perceptions of stability leading to operating response can be compared in order to evaluate the relative causal impact of each.

There are three possible outcomes for the test of the model. First, the data may not confirm any portion of the model. This would suggest that neither perspective on decline represents an adequate description of the decline process. In this event, paths can still be compared and those can be used to specify relationships observed in the data. A second outcome is that the data will confirm one perspective on decline, but not the other. The forms this outcome could take are of two types. First, the relationship between decline and response may be entirely mediated by internal perceptions of decline. This would suggest that the deterministic perspective on decline does not adequately represent the decline process, suggesting instead that these relationships are probablistic, depending upon one or several types of decision makers' perceptions of decline. Another possibility is that the model would confirm the determiristic view of the decline process. This would suggest that internal perceptions are not particularly relevant in describing the decline process. A third outcome is that neither perspective adequately describes the decline process, and that internal agreement on mission is causally related to response alternatives. A finding of this sort would suggest that perceptions are important for response to decline, but not in the way that theory has suggested. These various outcomes suggest that any results will illuminate the comparative utility of

existing theories of decline, and may therefore provide direction for future research.

Analytical Techniques

Generation of the correlation matrix. In order to use a LISREL V program, the user must specify the variables and hypothesized directionality for cause and effect variables. Given a specific set of data, LISREL V is able to calculate a set of estimated path coefficients and use those parameters to generate a correlation matrix consistent with those parameter estimates. This created correlation matrix is then compared to the set of observed correlations for the data. The primary statistical problem for a structural equations solution is one of "optimally estimating the parameters of the model and determining the goodness-of-fit of the model to sample data on the measured variables" (Bentler, 1980, p. 420).

The primary type of data used in a structural equations model is the correlation matrix. However, because variables in the higher education sample are measured at both the ordinal and interval level, an ordinary product moment correlation is not an accurate reflection of correlation. In order to examine the magnitude of this problem, raw data were entered into the LISREL V program and subjected to a subroutine that had the capacity to pairwise calculate polychoric and polyserial correlations as well as product moment correlations. Polychoric correlations estimate correlations when both variables are discrete, while polyserial

correlations derive estimates of correlation when one variable is discrete and the other is continuous. In the sample data, all but three variables (operating response, strategic response, and perceived cause) were continuous variables.

Unweighted least squares estimates were used throughout the data analyses reported here. This method is preferable to maximum likelihood when the data do not assume multivariate normal distributions (James, Mulaik, & Brett 1982; Joreskog & Sorbom, 1981). Examination of the frequencies on all ordinal level variables indicates that each is skewed in distribution, and for this reason it was considered appropriate to use an unweighted least squares estimation technique.

A decision was made to use a direct measurement model rather than a latent measurement model because it gives information about the relative importance of the independent variables as predic ors of dependent variables (Joreskog & Sorbom, 1981, III.28), and it also calculates a coefficient of determination for each and for all structural equations. In the first case, the advantage is that one can compare paths to make comments about relative impact of a causal variable on an effect variable. In the second case, the advantage is to demonstrate the amount of variance that the causal variables can explain for the effect variables. As a result of the decision to use a direct measurement model, the best single indicators of agreement, stability, and controllability were used in the analysis. As was noted in the preceding

description of the variables, these indicators were A2 for agreement, S1 for stability, and C2 for co trollability.

III. RESULTS

Examination of results for the direct measurement model indicate that this model generates a coefficient of determination for the structural equations of .29. In other words, the independent variables are able to explain .29 of the variance on the dependent variables. The amount of variance that causal variables explain for each strutural equation individually is .14 for perceived cause, .04 for perceived controllability, .07 for perceived stability, .34 for operating responses, and .10 for strategic responses. An examination of path coefficients for this model indicates the sources of variance for each of those effect variables. These path coefficients are described in the following section.

Path coefficients generated from the model are displayed in Table 1. For comparative purposes, this table displays the path coefficients, separating direct from indirect effects in order to calculate total effects of causal variables. The weights of path coefficients, together with the hypothesized direction of these paths (enclosed in parentheses) are visually displayed in Figure 2. As is evident from the data displayed in Table 1, the relative weights for path coefficients generated via the direct measurement model vary considerably from one another. While some paths are in the direction hypothesized, others are not. Among the more interesting general findings are that some of the ypothesized path coefficients approach zero, suggesting that there are no

Table 1

Direct, Indirect and Total Effects of Predictor Variables on Outcome and Mediating Variables

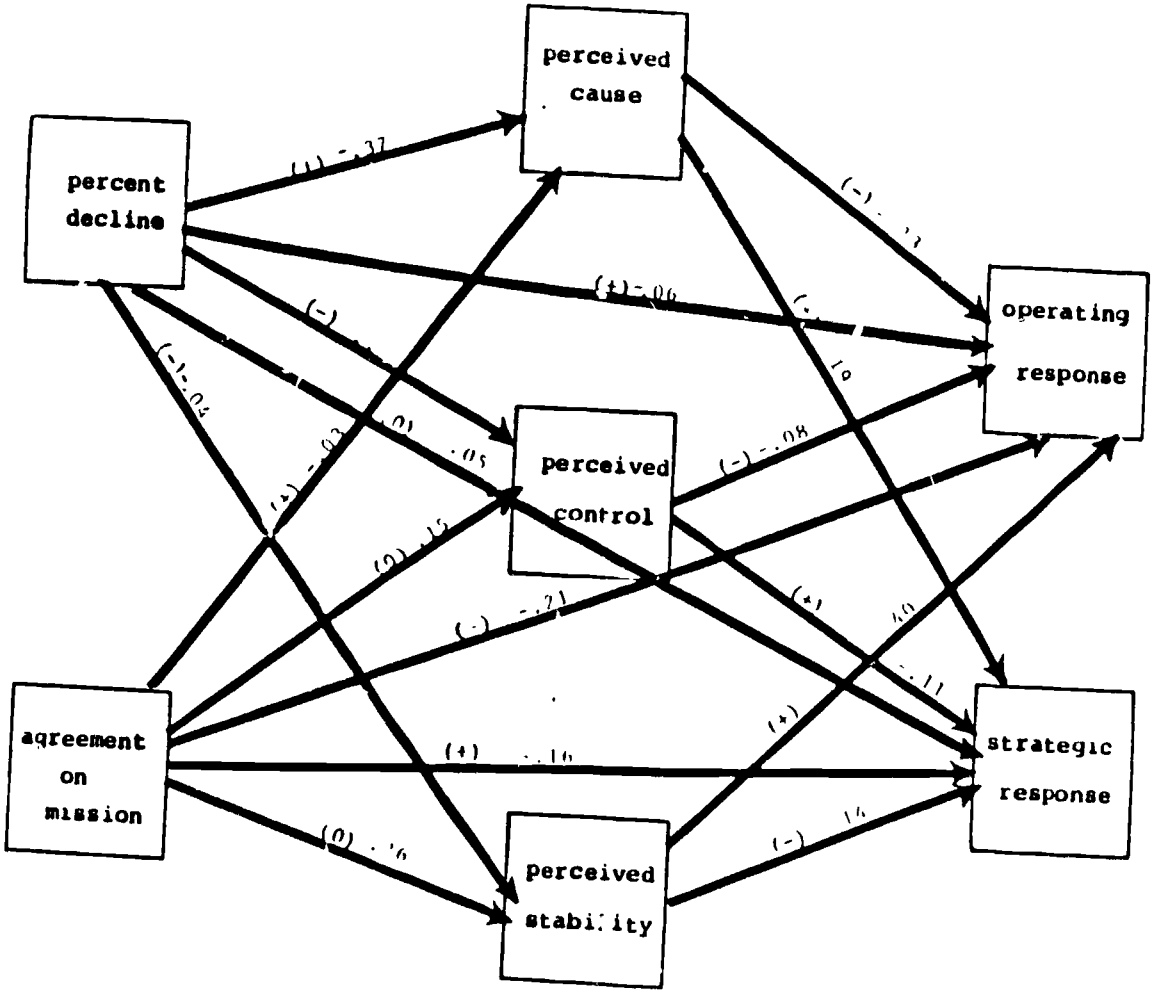
	Indirect Effects		Direct Effects				
	Decline	Agreement	Decline	Agreement	Perceived Cause	Perceived Control	Perceived Stability
Operating Response	.089	-.11	-.058	-.211	-.228	-.081	-.404
Strategic Response	-.081	-.058	.046	-.157	.189	-.110	-.138
Perceived Cause	--	--	-.372	-.029	--	--	--
Perceived Control	--	--	.145	.151	--	--	--
Perceived Stability	--	--	-.040	.260	--	--	--

Total Effects

	Decline	Agreement	Perceived Cause	Perceived Control	Perceived Stability
Perceived Cause	-.372	-.029	--	--	--
Perceived Control	.145	.151	--	--	--
Perceived Stability	-.040	.260	--	--	--
Operating Response	.031	-.321	-.228	-.081	-.404
Strategic Response	-.035	-.215	.189	-.110	-.138

Figure 2

Observed Path Coefficients



relationships among cause and effect variables as reflected by this particular data set. A heuristic for trimming a model is to eliminate path coefficients equal to or less than .05; doing this results in a set of path coefficients reflected in Figure 3. These results will be discussed with reference to the individual hypotheses.

Hypthesis 1a: The hypothesis proposed that there would be a positive relationship between the severity of decline and operating response, suggesting that more operating responses would be pursued as decline became more severe. This hypothesis was supported by the findings. However, the path between the severity of decline and operating responses approaches zero, suggesting that there is a weak causal relationship between these variables.

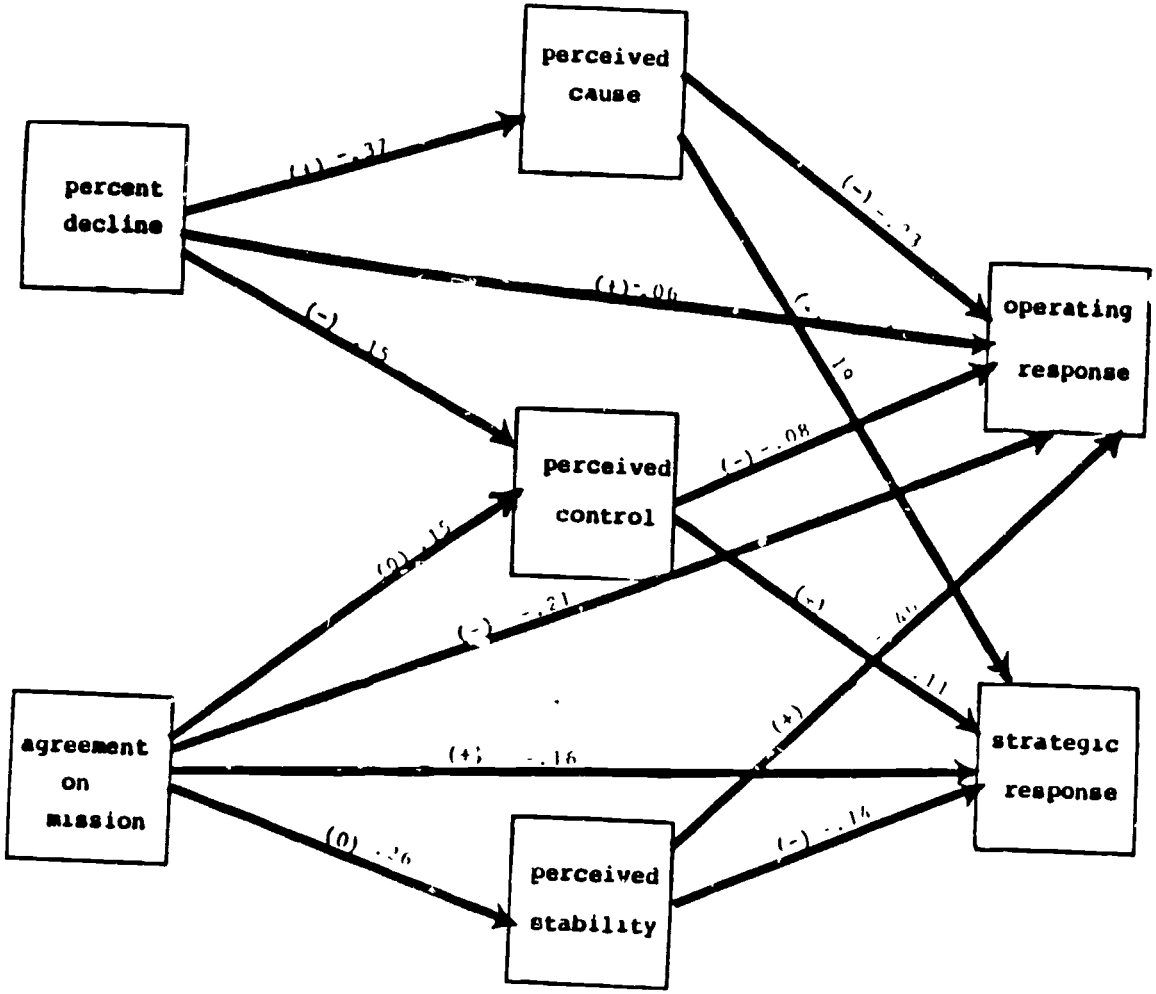
Hypothesis 1b: This hypothesis suggested that there was no relationship between the severity of decline and strategic responses to decline. The path coefficient was .05; the hypothesis is not disconfirmed.

Hypothesis 2a: It was expected that high agreement on mission would cause fewer operating responses, resulting in a negative relationship. The direct path coefficient was -.21; the combination of direct and indirect effects resulted in a path coefficient of -.321, suggesting that the hypothesis is supported by the results.

Hypothesis 2b: The hypothesis suggested that a high level of agreement would be positively associated with strategic responses. The direct path coefficient is -.16; the total effect is -.215.

Figure 3

Observed Path Coefficients (Trimmed Model)



These path coefficients suggest that the relationship is negative rather than positive; the results indicate that the higher the level of agreement, the fewer the strategic responses an organization can be expected to pursue.

Hypothesis 3a: It was expected that an internal perception of cause would be negatively related to operating responses. This relationship was evident in a path coefficient of -.23, suggesting that internal perceptions of cause are accompanied by more operating types of response.

Hypothesis 3b: Perceptions of external cause of decline were expected to be positively asssociated with strategic types of responses. A path coefficient of .19 appears to confirm this relationship.

Hypothesis 4a: The less an organization perceives itself to be in control of decline the more it will pursue operating types of response. The path coefficient for this relationship is weak, but is in the hypothesized direction at -.08.

Hypothesis 4b: The hypothesized relationship between perception of control and strategic response was positive, suggesting that high perceived control would be associated with more strategic responses. The path coefficient suggests that the relationship is negative (-.11); while this path coefficient is weak, it is a disconfirmation of the hypothesis.

Hypothesis 5a: A perception of a temporary enrollment decline was expected to lead to temporary types of responses that are operating in nature. This relationship was hypothesized as

positive; the results are the opposite with a path coefficient of -.40. This suggests that an expectation that decline is temporary will result in few operating responses.

Hypothesis 5b: A perception that decline is temporary was expected to be associated with few strategic responses. This was conceptualized as a negative relationship, and the path coefficient was negative at -.14.

Hypothesis 6: The severity of decline was expected to be positively related to external attribution of cause. The path coefficient was expected to be positive, but this expectation was disconfirmed by an observed path coefficient of -.37.

Hypothesis 7: It was hypothesized that percentage decline would have a negative effect on perception of control, suggesting that the more severe the decline, the less likely organizational members would be to believe themselves in control. This relationship was disconfirmed by a path coefficient of .15.

Hypothesis 8: It was proposed that severity of decline would be negatively related to a perception that decline was short term in duration. The path coefficient approached zero, but was in the direction of the hypothesized relationship at -.04.

Hypothesis 9: Agreement on mission was hypothesized as having a positive effect on perception of cause; this would suggest that high agreement on mission causes external attribution of cause. This path coefficient was -.03, indicating that the hypothesized relationship is not observed.

Hypothesis 10: Agreement on mission was not expected to share a relationship with perceived control. A path coefficient of .15 indicates that the relationship exists.

Hypothesis 11: Agreement on mission was not expected to share a relationship with perceived stability. An observed path coefficient of .26 suggests that there is a strong, positive effect for mission agreement on perceived stability.

The relationships reflected in path coefficients for this data suggest that in some cases hypothesized relationships are confirmed, while in other cases the results are contrary to expectations. In general, a review of Table 1 suggests that the single strongest predictor for operating response is perceived stability. An interpretation of the path coefficient of -.404 suggests that a perception that decline is temporary will be accompanied by few operating types of response. The single best predictor of strategic response is agreement on mission. A path coefficient of -.215 suggests that as agreement on mission increases, number of strategic types of responses decreases. Finally, it can be observed that the severity of decline has a direct impact on perception of cause and perception of control, and a weak impact on operating responses to decline. However, perceptual variables tend to mediate the direct effects of severity of decline on responses, resulting in total effects of .031 on operating responses and -.035 on strategic responses. In other words, the total effect of decline severity on responses approaches zero.

IV. DISCUSSION

Among the questions that this research was designed to answer were (a) between the contingency-based and the strategic choice-based literature on decline, which better describes the relationships observed in the sample data? (b) which dimension of perception is most causally related to two types of organizational response to decline? (c) what are the direct and indirect effects of enrollment decline on response to decline? and (d) what are the direct and indirect effects of agreement on mission on responses to decline? Implicit are a number of other questions posed more specifically by Hypotheses 1 through 11. These hypotheses and the results of tests of them were reported elsewhere. The present section is intended to discuss these results in order to enumerate possible interpretations.

It was suggested that there were three results possible for the proposed study. Among them were that the data would fail to confirm the theoretical model, that the data would suggest confirmation for either a contingency-based approach or a strategic choice-based approach to research on decline, or that neither perspective would be shown to adequately model the response process. Observed results suggest that the data are consistent with the theoretical model, and that about 30% of the variance observed in responses to decline is explained by variables.

Second, the results indicate that contrary to the contingency-based literature, objective variables alone are poor indicators of organizational responses to decline. While the severity of enrollment decline was shown to have a causal relationship with perception of cause and perception of controllability, it also was shown to have a weak relationship with the incidence of operating responses, and no significant relationship with strategic responses. This suggests that observed relationships of covariance between the severity of enrollment decline and subsequent institutional responses are not causal in nature.

Moreover, the results indicate that mission agreement and perceptions of cause, control, and stability are major factors in the response process. While these variables are able to explain a limited amount of the variance, they do suggest that perceptual variables are important in explaining organizational responses to decline. These results indicate that this set of perceptual variables is more valuable than the severity of enrollment decline in explaining organizational responses, the impact of the severity of decline on the perceptions of cause and controllability suggests that both perspectives can contribute to an understanding of the response process.

Path coefficients observed with this set of data provide general support for examining perceptual as well as objective data in order to predict organizational response to decline. This would suggest that the strategic choice literature is useful in

helping to structure and test hypotheses relevant to research on organizational decline, while research results based entirely on objective measures of decline and organizational response may not only limit the context of questions asked, but may achieve results that reflect only a narrow range of organizational experiences. In general, the results of data analysis suggest that perceptions of decline by organizational members are far more important for predicting response to decline than is the severity of decline.

Substantively, the results indicate that there is a set of countervailing flows that have to be taken into account in explaining the responses of colleges and universities to declining enrollments. One example looks at severity of decline. On one hand, the severity of declining enrollments leads to attributions of decline being caused by internal events. In turn, the attribution of internal causation leads to an emphasis on increasing the efficiency of institutional operations (operating responses), but not to repositioning the institution within the educational marketplace (strategic responses). Conversely, the attribution of external causation does lead to strategic responses. In effect, the attribution of external causation may indicate a felt need to realign the institution in a changing environment by modifying its domain of operation (i.e., shifting its position in the educational marketplace). Making such strategic changes often requires that the institution expend resources to develop new programs and educational delivery systems. Given that most institutions do not have such resources

readily available during a period of declining enrollments, they must increase the efficiency of institutional operations so as to make them available. This suggests that there should be a unidirectional causal relationship from strategic response to operating response. While this relationship was not specified by the model, a correlation of .15 suggests that for this sample, the causal relationship may be weak. Hence the relationships between attributions of perceived cause and the incidence of operating and strategic responses.

In contrast, a strong sense of institutional mission pulls in the opposite direction in that it is negatively related to the occurrence of operating and strategic responses. One interpretation is that members of institutions with a strong sense of mission usually believe that what the institution is doing is both correct and important. As a result, such institutions may loathe making the types of strategic changes that are measured by the strategic response index, which reflects mechanisms for moving away from the traditional educational marketplace. For example, a traditional liberal arts institution with a strong sense of mission is unlikely to readily change its program offerings or delivery mechanisms to attract part-time, vocationally-oriented students.

It also is possible that the types of strategic responses selected by such institutions are not adequately reflected in the strategic response index. They may rely on other types of strategic responses, such as improving their image with

prospective traditional students or marshalling constituent support. For example, Chaffee (1984) has shown that symbolic strategic responses are important to understanding successful adaptation to decline in liberal arts colleges. Similarly, Finkelstein et al. (1984) found that institutions with strong missions were more successful in coping with decline if they did not deviate radically from their missions than institutions that did.

The moderating effect of perceived stability on the relationship between mission agreement and operating and strategic responses also is an important factor that must be taken into account. What the data indicate is that the greater the perceived duration of a decline episode, the more likely the institution is to engage in operating and strategic responses. This set of relationships tend to balance the direct relationship between mission agreement and operating and strategic responses. While institutions with a strong sense of mission agreement are less likely to engage in operating or strategic responses, a perception that the decline episode will be long in duration pulls in the opposite direction. If members of the institution believe that the decline episode will be long or permanent, the findings suggest that the institution will be more prone to engage in operating and strategic responses, even with a developed sense of mission.

Contrary to prevailing theory, this study found that the longer the perceived duration of a decline episode, the greater

the use of operating responses. This finding makes sense within the context of managing decline. If managers believe that declining enrollment is a temporary phenomenon, they are unlikely to engage in any more actions than are necessary to bring revenues and expenditures into line. If the institution has what it believes to be an adequate cushion of slack resources, it may do nothing. This logic is similar to that presented by Schendel and Patton (1976) and Schendel et al. (1976) concerning the relationship between the severity of decline and magnitude of organizational response. They suggested that often takes a severe jolt to mobilize an organization into action. One such jolt is the realization that the institution may have to cope with declining enrollments into the forseeable future, which then results in actions designed to conserve resources.

In conclusion, this study has shown that neither the contingency or strategic choice approaches adequately model the responses of colleges and universities to declining enrollments. But both have provided useful information on which to base further research in developing a model that does so. Further efforts will be made by the Organizational Studies Division to capitalize on these insights in developing a more comprehensive and accurate model of how colleges and universities cope with decline.

REFERENCES

Asher, H.B. (1983). Causal modeling (2nd ed.). Beverly Hills, CA: Sage Publications.

Astley, W.G., & Van de Ven, A.H. (1983). Central perspectives and debates in organization theory. Administrative Science Quarterly, 28, 248-278.

Baker, D.D., & Cullen, J.B. (1981, August). The moderating effect of growth, decline, and age on organization structure and survival. Paper presented at the meeting of the Academy of Management, San Diego, CA.

Bentler, P.M. (1980). Multivariate analysis with latent variables: Causal modeling. Annual Review of Psychology, 31, 419-456.

Bettman, J.R., & Weitz, B.A. (1983). Attributions in the board room: Causal reasoning in corporate annual reports. Administrative Science Quarterly, 28, 165-183.

Bibeault, D. (1982). Corporate turnarourd. New York: McGraw-Hill.

Bowen, F.M., & Glenny, L.A. (1981). Institutional responses to financial stress: The California study. In L.L. Leslie and J. Hyatt (Eds.), Higher education financing policies: States/institutions and their interactions (pp. 141-150). Tucson, AZ: Center for the Study of Higher Education.

Brantley, P.S., Miller, C.S., & McAlpine, T. (1979). To be or not to be--Survival profiles of emerging institutions. New Directions in Institutional Research, 24, 11-27.

Cameron, K. (1983) Strategic responses to conditions of decline: Higher education and the private sector. Journal of Higher Education, 54, 359-380.

Carter, E.A., & Blanton, J.C. (1983). Institutional management flexibility: A strategy for dealing with funding reductions. In R.A. Wilson (Ed.), Survival in the 1980s: Quality, mission, and financing (pp. 146-155). Tucson, AZ: Center for the Study of Higher Education.

Charfee, E.E. (1984). Successful strategic management in small private colleges. Journal of Higher Education, 55, 212-241.

Chaffe E.E., & Krakower, J.Y. (1984). Strategies for managing when resources are unpredictable. Boulder, CO: National Center for Higher Education Management Systems.

Deal, T.E., & Kennedy, A.A. (1982). Corporate cultures. Reading, MA: Addison-Wesley.

Emery, F.E., & Trist, E.L. (1965). The causal texture of organizational environment. Human Relations, 18, 21-32.

Emory, C.W. (1980). Business research methods. (Rev. ed.). Homewood, IL: Richard D. Irwin.

Finklestein, M., Farrar, D., & Pfnister, A.O. (1984). The adaptation of liberal arts colleges to the 1970s: An analysis of critical events. Journal of Higher Education, 55, 242-268.

Ford, J.D. (1984). The effects of causal attribution on decision makers' responses to performance downturns. Unpublished manuscript. The Ohio State University, College of Administrative Science, Columbus.

Fottler, M.D., & Smith, H.L. (1982, April). The management of organizational deterioration. Paper presented at the Western Academy of Management meeting, Colorado Springs, CO.

Greenhalgh, L. (1981, December). Organizational decline. Unpublished paper.

Hambrick, D.C., & Schecter, S.M. (1983). Turnaround strategies for mature industrial-product business units. Academy of Management Journal, 26, 231-248.

Hamermesh, R.G., & Silk, S.B. (1979, September-October). How to compete in stagnant industries. Harvard Business Review, 161-168.

Harrigan, K.R. (1983). Research methodologies for contingency approaches to business strategy. Academy of Management Review, 8, 398-405.

Harrigan, K.R., & Porter, M.E. (1983, July-August). End-game strategies for declining industries. Harvard Business Review, 111-120.

Hofer, C.W. (1980). Turnaround strategies. Journal of Business Strategy, 1, 19-31.

Holsti, O.R. (1978). Limitations of cognitive abilities in the face of crisis. In C.F. Smart and W.T. Stanbury (Eds.), Studies on crisis management (pp. 39-55). Toronto: Butterworth & Co.

Hughes, K. (1982). Corporate response to declining rates of growth. Lexington, MA: Lexington Books.

James, L.R., Mulaik, S.A., & Brett, J.M. (1982). Causal analysis. Beverly Hills, CA: Sage Publications.

Jick, T.D., & Murray, V.V. (1982). The management of hard times: Budget cutbacks in public sector organizations. Organization Studies, 3, 141-169.

Jonsen, R.W. (1984). Small colleges cope with the eighties: Sharp eye on the horizon, strong hand on the tiller. Journal of Higher Education, 55, 171-183.

Joreskog, K.G. (1981). Basic issues in the application of LISREL. Data, 1, 1-6.

Joreskog, K.G., & Sorbom, D. (1981). LISREL V. Chicago: International Educational Services.

Kenney, D.A. (1979). Correlation and causality. New York: Wiley.

Kerlinger, F.N. (1973). Foundations of behavioral research (2nd ed.). New York: Holt, Rinehart and Winston.

Krakower, J.Y., & Zammuto, R.F. (1983, November). A report on the retrenchment activities of colleges and universities. Boulder, CO: National Center for Higher Education Management Systems.

March, J.G., & Simon, H.A. (1958). Organizations. New York: Wiley.

Miller, D. (1977). Common syndromes of business failure. Business Horizons, 20, 43-53.

Mingle, J.R. (1982). Redirecting higher education in a time of budget reduction. Issues in Higher Education, 18.

Peck, R.D. (1984). Entrepreneurship as a significant factor in successful adaptation. Journal of Higher Education, 55, 269-285.

Peters, T.J., & Waterman, R.H. (1982). In search of excellence. New York: Harper & Row.

Rubin, I. (1977). Universities in stress: Decision making under conditions of reduced resources. Social Science Quarterly, 58, 242-254.

Rubin, I.S. (1979). Retrenchment, loose structure and adaptability in the university. Sociology of Education, 52, 211-222.

Salancik, G.R., & Meindl, J.R. (1984). Corporate attributions as strategic illusions of management control. Administrative Science Quarterly, 29, 238-254.

Schendel, D.E., & Patton, G.R. (1976). Corporate stagnation and turnaround. Journal of Economics and Business, 28, 236-241.

Schendel, D., Patton, G., & Riggs, J. (1976). Corporate turnaround strategies: A study of profit decline and recovery. Journal of General Management, 3, 3-11.

Smart, C., & Vertinsky, I. (1977). Designs for crisis decision units. Administrative Science Quarterly, 22, 640-657.

Smart, C., & Vertinsky, I. (1984). Strategy and the environment: A study of corporate responses to crises. Strategic Management Journal, 5, 199-213.

Starbuck, W.H., Greve, A., & Hedberg, B.L.T. (1978). Responding to crisis. Journal of Business Administration, 9, 111-137.

Staw, B. (1980). Rationality and justification in organizational life. Research in Organizational Behavior, 2, 45-80.

Staw, B.M., McKechnie, P.I., & Puffer, S.M. (1983). The justification of organizational performance. Administrative Science Quarterly, 28, 582-600.

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

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

U.S. Bureau of the Census. (1975, October). Projection of the population of the United States: 1975 to 2050. Current Population Reports, Series P-25, No. 601.

Weick, K.E. (1976). Educational organizations as loosely coupled systems. Administrative Science Quarterly, 21, 1-19.

Weiner, B. (1979). A theory of motivation for some classroom experiences. Journal of Educational Psychology, 71, 3-25.

Zammuto, R.F. (1983a). Growth, stability, and decline in American college and university enrollments. Educational Administration Quarterly, 19, 83-99.

Zammuto, R.F. (1985, in press). The management of decline in American higher education. In J.C. Smart (Ed.), Higher education: Handbook of theory and research, Volume 2. New York: Agathon Press.

Zammuto, R.F., & Cameron, K.S. (1985). Environmental decline and organizational response. Research in Organizational Behavior, 7, 223-262.

Zammuto, R.F., Whetten, D.A., & Cameron, K.S. (1983). Environmental change, enrollment decline, and institutional response. Peabody Journal of Education, 60, 93-107.