1-1-1983

Environment, Strategy and Performance: An Empirical Analysis in Two Service Industries

William R. Bigler, Jr.
Southern Methodist University

Banwari L. Kedia
Louisiana State University

Follow this and additional works at: https://scholar.smu.edu/business_workingpapers

Part of the Business Commons
ENVIRONMENT, STRATEGY AND PERFORMANCE: AN EMPIRICAL ANALYSIS IN TWO SERVICE INDUSTRIES

Working Paper 83-104*

by

William R. Bigler, Jr.

and

Banwari L. Kedia

William R. Bigler, Jr.
Organizational Behavior and Administration
Edwin L. Cox School of Business
Southern Methodist University
Dallas, Texas 75275

Banwari L. Kedia
Department of Management
Louisiana State University
Baton Rouge, Louisiana 70803

*This paper represents a draft of work in progress by the authors and is being sent to you for information and review. Responsibility for the contents rests solely with the authors. This working paper may not be reproduced or distributed without the written consent of the authors. Please address all correspondence to William R. Bigler, Jr.
Environment, Strategy and Performance: An Empirical Analysis in Two Service Industries

Abstract

This paper conceptually and empirically examines the Environment, Strategy and Performance linkage in two service industries. The paper's primary objective is to show that viewing these constructs as an insoluble system provides us knowledge that perhaps would not be forthcoming otherwise. The authors argue that delving into these constructs as a system within and between the two industries highlights certain disparities in conventional OT/Strategic Management thinking.
One of the perhaps most promising but arcane panoramas of theory and empirical research that is developing in the Strategic Management area is the interface between Organization Theory (OT) and Business Policy (BP). Mintzberg (1977), Miles and Snow (1978), Miller and Friesen (1977, 1978, 1980), Lenz (1980) and Hambrick (1981) have been some of the early proponents of such a marriage. Recently, Pfeffer and Salancik (1978), Aldrich (1979), Mintzberg (1979) and Ansoff (1979) have developed rigorous but at the same time highly creative extensions of such work. Chakravarthy (1982), Astley and Fombrun (1982) and Tichy (1982) have further developed such notions.

Central to this Organization Theory/Business Policy interface is the primacy of the relation of Environment and Strategy. The central premise of this Developing OT/BP interface is that Environmental and Strategy form one of the most basic and fundamental systems that provides for explanation of strategic phenomena.* The argument proceeds that Environment and Strategy are inextricably bound together: environmental conditions at least partially determine strategy and strategy in turn relates the firm to its environment. In this reciprocal process, strategy can "influence" the environment, even if ever so slightly, over a period of time. Proponents of this

*Strategic phenomena refer to the exigencies and even vagaries of organizational life at the top levels that give rise to and then reflect the formal traces called Environment, Strategy and Performance above.
OT/BP interface either explicitly or more often implicitly posit that to split this basic system into either Environment or Strategy for relatively more narrow study is to do so at some risk. The risk is to reify either Environment or Strategy and erroneously make either one out to be the self-contained system. To conceptualize and do research in this manner, according to this argument, is to produce at best partially valid knowledge and at worst fallacious results and conclusions.

An alternative is to conceptualize and do empirical research in a relatively systemic manner that incorporates both Environment and Strategy. The purpose of this paper is to 1) briefly review why such systemic frameworks are warranted, 2) review how Environment and Strategy are construed in this newer approach and 3) to report one attempt to conceptually and empirically relate Environment, Strategy and Performance within and between two service industries. The authors hope to illuminate the fruitful promise of this new OT/BP interface.

THEORY AND RESEARCH

The following brief literature review will attempt to build the argument for the validity of viewing Environment and Strategy as an insoluble system and to support the research hypotheses for this study.

Overview

The view that environmental forces have impact on internal organizational structures, processes and outcomes is one that has
become commonly held. On this subject Kast, Summer and Beard (1980) write:

The complexities and interdependencies in modern society accentuate the impact of environmental forces on organizations. The boundaries between organizations and their environments are becoming more permeable--external forces are having a greater impact on internal structures, processes and managerial practices. The development of open systems theories (has) highlighted the environment-organization interface... (2: Preface to Dess (1980).

In this crucial interaction, environmental forces supply both threats and opportunities for the firm and "determine" the limits of action. Strategy is usually held to be that area where management has some discretion in reacting to and "enacting" or creating the environment (Weick, 1969). At a general level strategy is seen as the content (the particular tactics) and the processes of formulation which set "... how an organization defines its relationship to its environment in the pursuit of its objectives" (Bourgeois, 1980b:27). Until recently, Organization Theory researchers were interested in the effects of environmental forces on structure. Recently however, researchers in the emerging Organization Theory/Business Policy interface area have borrowed from the organization theorists environmental constructs to help explain the Environment + Strategy + Performance connection.

Environment

The term environment, as with the term strategy discussed below, is a multi-defined construct. Most researchers would agree that the environment is that which is external to the organization. A little more succinct is the definition taken by the Purdue studies (Hatten, et. al, 1978; Schendel and Patton, 1978) that the environment
is that group of variables over which management has no (or little) control. Most would also agree that the environment creates important "strategic contingencies" (Hickson, et. al, 1971) for the organization which the firm must deal with in order to survive. Terreberry's (1968) hypotheses that 1) internal organizational change is increasingly externally induced and 2) organizational survival is a function of how the organization adapts to this turbulence are hypotheses that most would not disagree with. How to operationally define these rules of thumb however has become problematic. Add to these problems the distinction between a general environment (social mores, state of economy, etc.) and a task environment (particular stockholders; suppliers, customers, etc. who have direct impact on the firm) (Dill, 1958; Osborn, Hunt and Jauch, 1980), and one can see the potential confusion underlying the construct.

Bourgeois (1980b:33) provides a typology of the Environment construct to help add clarity to the issues involved. Environments have been defined in terms of 1) objects 2) attributes and 3) perceptions at both the general and task levels. These categories highlight the current debate over the proper way to operationalize the strategic contingencies posed by the environment. Is it better to operationalize the environment in terms of objective attributes or objects or subjective perceptions of these attributes in terms of amount of uncertainty engendered by them? Perceived environmental uncertainty (PEU), or the inability to predict the consequences of decisions made (Leblebici and Salancik, 1981), is held to be important in understanding how firms are structured so as to allow for the flow of more information. The access to and the use of more information is held to
decrease or neutralize uncertainty. In relating environmental attributes to PEU, Duncan (1972), based on Thompson's (1967) theory, used subjective reports of the degree to which the environment was seen as simple vs. complex (the number of task environment components) and stable vs. shifting (the rate of change in these components) to explain PEU. Lawrence and Lorsch (1967) operationalized the environment in this manner also. Self reports on time span of feedback, rate of change in the environment and general uncertainty about particular events in the environment were used to explain PEU. Duncan (1972) and Leblebici and Salancik (1981) found that the rate of change (dynamism) better explained PEU than did the number of components in the environment (diversity). Lawrence and Lorsch found that as time span, rate of change and general uncertainty increased, firms became more differentiated and integrated in their structures.

Using subjective independent variables to explain PEU caused considerable debate (Downey, Hellriegel and Slocum, 1975; Tosi, Aldag and Storey, 1973). This led to an attempt to measure the attributes of diversity (complexity above) and dynamism (rate of change above) by objective indicators. The recent conceptual work of Pfeffer and Salancik (1978) and Aldrich (1979) have developed these lines of argument. Aldrich (1979:74) hypothesized that six dimensions: 1) Capacity, 2) Homogeneity-Heterogeneity, 3) Stability-Instability, 4) Concentration-Dispersion, 5) Domain Consensus-Dissensus and 6) Turbulence can describe environments. These dimensions allegedly affect all firms in their quest for survival. Pfeffer and Salancik (1978:68) collapse these six dimensions into three: 1) concentration of resources (diversity) 2) munificence of resources (abundance or
capacity) and 3) interconnectedness of the organizations in the environment. The work of Pfeffer and Salancik (1978) is based on a resource dependence view of organizations (where availability and exploitation of resources and interorganizational power are crucial) and as such Aldrich's dimensions 2, 3 and 4 are excluded from direct analysis. These two recent conceptual forays have provided for a needed synthesis of the cumulative implications of the previous research.

Dess (1980), put to empirical test a variation of Aldrich's formulation. He hypothesized that three environmental dimensions:

1) Environmental Munificence - Industry Sales Growth
2) Environmental Complexity - Industry Product Diversity
3) Environmental Dynamism - Industry Sales Instability

objectively measured, could describe the competitive environments of most firms. Dess (1980) was successful in showing, through factor analysis, that these three dimensions account for 60% of the variation in 23 component item variables. Even though Dess (1980) attempted to delve into the accuracy of Top Management Teams (TMT) assessments of their environments and did not delve into PEU, his operationalization and measurement of the environmental dimensions were supported.

Given the above arguments and findings, we can now posit a synthesis of environmental attributes (objective measures) and PEU. Figure 1, based on Pfeffer and Salancik (1978) illustrates the hypothesized linkages. As mentioned before, the earlier work of Duncan (1972) who used perceptual measures of environmental attributes to the recent work of Leblebici and Salancik (1981) who used objective measures of the attributes, have consistently found that dynamism and not diversity most significantly relates to PEU. Presumably, the
organization matches diversity with diversity by differentiation; departments (Lawrence and Lorsch, 1967) or boundary spanners (Jemison, 1981; Aldrich and Herker, 1977) are added to match increased diversity. Evidently, these checks on environmental diversity are performed without significant levels of uncertainty. Dynamism, however, produces a condition where placing probabilities on future outcomes is uncertain. Almost by definition this would cause greater PEU. Objectively measured munificence has been found not to relate to PEU. The posited reason for this is that as the task environment grows rich in resources this would entail more slack resources (Bourgeois, 1981) for all organizations in the task environment. In abundant environments uncertainty as defined may exist but may not be perceived or if perceived does not cause concern. A firm with slack resources may view taking losses as just part of competitive maneuvers and these tactics may not have much PEU associated with them. From these formulations we can posit:

Hypothesis 1: The dynamism in task environments will explain PEU better than munificence, and diversity will have no effect on PEU.

Strategy

a. Overview

Of the many attempts to outline what strategy is (see Hofer and Schendel, 1978 for a recent review), the most useful for the purpose of this research is to think in terms of (1) strategy content and (2) the processes of strategy formulation and implementation. Although the prescribed progression is Formulation → Content → Implementation, the components will be discussed separately to isolate content and process issues.
Strategy content attempts to focus on "which sets of strategies (specific programs) seem to enable business firms to achieve economic success" (Bourgeois, 1980b:26). The programs stressed are which particular goals-means (objectives) structures are espoused by top management (Bourgeois, 1978, 1980a), which markets are served (Buzzell, Gale and Sultan, 1973; Schoeffler, Buzzell and Heany, 1974), which diversification strategies are associated with high performance (Rumelt, 1974), which sets of generic strategies (differentiation, cost leadership or focus) are more appropriate for certain types of industry structure (Porter, 1980) and finally which grand strategies (growth, stable growth or retrenchment and turnaround) are more appropriate for certain sizes of market growth rates (Glueck, 1980).

Strategy formulation, on the other hand, highlights the importance of scanning the environment for threats and opportunities, assessing the firm's internal strengths and weaknesses and forming distinctive competence statements ("What business are we in") which dictate goals and objectives (Ackoff, 1970, Andrews, 1980, Ansoff, 1965, Uyterhoeven, et. al, 1977, Drucker, 1974).

Strategy implementation is concerned with designing appropriate organizational structures and administrative processes so that the chosen strategy content can be carried out effectively (Glueck, 1980; Quinn, 1977, 1978, 1980).

b. Research Issues

The choice of which component to use in operationalizing strategy is crucial to the purpose of the research, the nature of the variables that are studied, and the statistical validity of the findings. Strategy content research usually is performed using at least
interval level variables with cross sectional research designs. The formulation and implementation research tends to be case studies, which are longitudinal but which use anecdotal evidence.

Another issue in strategy research is the level at which the construct is operationalized and measured. Vancil and Lorange (1975) were the first to explicate a corporate vs. business level strategy distinction. Bourgeois (1980b:27) outlines this hierarchical categorization as follows:

1. **Domain definition strategy** refers to the organization's choice of domain or change of domain that occurs when, for example, a firm diversifies into or exits from particular products or markets. Miles and Snow's "entrepreneurial problem" (1978) is of this type, as are Chandler's "strategic decisions" (1962:11).

2. **Domain navigation strategy** refers to competitive decisions made within a particular product-market (e.g. industry), or task environment. Thus, once a domain or competitive arena has been determined by primary strategy, the organization is subject to the environmental constraints to which the contingency theorists attribute primacy. This level then, includes Churchman's "missions" (1968, p. 40), Ansoff's "administrative decisions" (1965, p. 6), Chandler's "entrepreneurial decisions" (1962, p. 11), Uyterhoeven's "competitive weapons" (1977, 16) and Hofer's "distinctive competences" (1973, p. 48).

The distinction is important because in **domain definition strategy**, one is concerned with the "portfolio" issue (Hofer and Schendel, 1978:55). Here, at the corporate level, the firm's strategy centers on pooling a group of "assets" (firms) such that either total risk for a given level of corporate return is minimized or return for a level of risk is maximized. The type of variables and issues studied at this level are very much different than the ones studied in **domain navigation strategy**. Here, the concerns are on strategy process and content which define how a particular business in this corporate pool of assets will compete and relate itself to its environment. It is
here that particular product/market designations are made, how much market penetration and geographic dispersion are desired and how wide the range of products or services will be (Glueck, 1980; Kotler, 1980). At this level, one is also concerned with "distinctive competence" (Selznick, 1957) and "excellence" (Drucker, 1954) which attempts to stipulate a unifying image and comparative advantage for the organization in its task environment. Indeed, it is this pervasive image or "character" which guides goals and objectives (Bourgeois, 1980a) and the particular product/markets chosen. These concerns are held to be unnecessary and could be burdensome at the corporate (domain definition) level.

Most of the previous research that has attempted to link environment with strategy has done so at the task environment level. Evidently, the uncertainty engendered by the general environment (political system, mores, customs, etc.) gets too diffused to be captured empirically and tested for. With respect to task environments, Khandwalla found that managers who perceive their task environments as being more dynamic or uncertain would most likely institute strategies that were more "comprehensive and multifaceted" (Bourgeois, 1980b:32). Miles and Snow (1978), Paine and Anderson (1977), Miller and Friesen (1977, 1980) and Snow and Hrebiniak (1980) have also found that strategists in more dynamic and uncertain environments "tend to be more proactive and innovative and they tend to assume a higher degree of risk" (Bourgeois, 1980b:32). Recall that more uncertain conditions tend to generate the need for more information: more information is believed to ameliorate or at least reduce the uncertain condition. Boundary spanning (Aldrich and Herker, 1977) and explicit
environmental tracking (Ackoff, 1970; Aquilar, 1967; Andrews, 1980; and Keegan, 1974) are held to be appropriate tactical responses for these uncertain environments.

While these studies have provided useful knowledge of these relations, they have fallen prey to the same problems of the Environment-Structure research: both the measures of environment and strategy are perceptual. Although, Hambrick (1981) did replicate the Miles and Snow (1978) findings using objective measures of strategy, his research was conducted in the health care, education and insurance industries. Only the findings from the insurance industry would be easily transferable to other private, economic organizations.

From the cumulative findings of the research in environment and strategy cited above, the authors can posit the following hypotheses:

Hypothesis 2: Firms in more diverse environments should match this diversity with internal diversity (Ashby, 1956). As such the firms in the sample will:

2a. Report that they offer more services, deposits and loan types and employ more advertising media.
2b. Will have a more diverse distribution of actual loan and deposit categories.
2c. Will have more actual geographic dispersion of offices (main office plus branches).

Hypothesis 3: Firms in more dynamic environments will attempt to elicit more information from the environment to neutralize uncertainty. As such the firms in this sample will:

3a. Report that they engage in boundary spanning activity more than firms in less dynamic environments.
3b. Report that they use explicit environmental tracking measures more than firms in less dynamic environments.

Hypothesis 4: Firms in more dynamic and diverse environments will have perceived goal structures that are more diverse:
they will consider more goals important and have higher importance scores than firms in less dynamic and diverse environments. The reason for the apparent confounding of independent variables is that goal structures can match diversity and through signalling competition and customers (Porter, 1980:75), gain information about the environment.

Performance

Performance indicators are generally considered to be a subset of effectiveness indicators. Effectiveness criteria are usually considered long term phenomena: the organization that survives is considered to be effective (Gibson, Ivancevich and Donnelly, 1979). While effectiveness criteria can apply to all types of organizations, performance indicators usually refer to quantifiable, shorter term phenomena. For private economic organizations, some return on investment or assets is usually used to indicate quantifiable returns to a group of owners. It is assumed that the more non-quantifiable "constraints" (Simon, 1964) to economic performance such as employee morale, ability to secure resources, etc. are reflected in the return on investment figure.

Another classification of effectiveness criteria centers around a goal approach model and a systems-resource model and whether the criteria are judged internally by management or are imposed externally on them. The goal approach model, first presented by Georgopoulous and Tannenbaum (1957), simply asks what is effectiveness in terms of management's own assessment of themselves. If management is secure in its judgment of the degree to which their own goals have been achieved, the organization is deemed effective. This presupposes though that management is being honest with themselves and the goals were formulated in such a way that the organization is at least com-
compatible with its environment. Compatibility with the environment in this regard refers to goals whose attainment has provided the firm with strategies and tactical viability and has not jeopardized the firm's societal legitimacy (if this is an important strategic concern).

Yuchtman and Seashore (1967), however, have noted the pitfalls of deception that the goal model can engender. Goals are fuzzy targets, are multiple and conflicting, and can be internally consistent without relating to the reality of the task environment. They posited that a systems-resources approach would provide for a needed objective, outsider judgement of effectiveness. This model is based on the notion that modern organizations are open systems and thus engage in competitive and exchange relationships with their task environments. Effectiveness is the "ability of the organization in either relative or absolute terms, to exploit its environment in the acquisition of scarce and valued resources" (Yuchtman and Seashore, 1967:898) (Pfeffer and Salancik, 1978). The organization is most effective when it "maximizes its bargaining position and optimizes its resource procurement." This formulation places prime importance on relations with the task environment. Here the importance of interorganizational power relations with suppliers, competitors, government and customers would become salient (Pfeffer and Salancik, 1978; Dill, 1958; and Porter, 1980). In addition, effectiveness can be judged in this resource framework, at the most extreme position, without regard for the goal preferences of management.

In reality though, it is goal preferences which limit and direct an organization's relation with the environment, so the two
approaches may not be as distinct as they were once held to be (Hall, 1977:91). As Child (1972) has posited, TMT can, in most circumstances, choose which environments the firm will engage with. In all environments, except where high barriers to exit exist (Porter, 1980), management has some discretion in choosing goals which help align the firm with perhaps more hospitable environments.

An intermediate position in judging performance would be that of Hofer (1973, 1979). He postulated that return on value added (ROVA: dollar sales minus cost of raw materials and purchased parts) would 1) provide a return measure to owners and 2) provide a proxy measure for the organizations ability to secure resources and of its contribution to the task environment. Given the nature of the sample for this research though (two service industries), the value added construct does not apply. Accordingly, return on assets will be used as an objective indicator. This measure is a commonly used indicator of overall financial institution performance (Reed, et. al., 1980). Given its hypothesized systemic orientation, it can be inferred that (except for new firms) a high ROA is associated with at least a partial command of required resources. We can now present the final research hypothesis.

Hypothesis 5: Firms who make the appropriate Environment-Strategy link will have higher actual performance and will report higher levels of goal attainment relative to a perceived industry norm. Specifically, for this sample:

5a: Firms in dynamic and diverse environments, who exhibit more diverse goal structures and more diverse actual loan and deposit categories, who have higher office ratios, and who use more boundary spanning and tracking will be higher performers than firms who have inappropriate strategies for these environments. For less
dynamic and diverse environments, the opposite strategic attributes would be associated with high performance.

METHOD

As can be inferred from the above presentation, this study will seek to provide an answer to the following questions:

1. Can the task environments of organizations be objectively described in terms of critical input resource information supplied to top management teams (TMT's) and Chief Executive Officers (CEO's)?

2. Can this objective description be related to the amount of perceived environmental uncertainty (PEU) as reported by CEO's and other members of TMT's?

3. Can both the objective descriptions of task environments and PEU be related to both actual and perceived strategies in terms of product/market diversity and information gathering proclivities?

4. Can alignments in environment and strategy, or environment or strategy alone, account for actual and perceived performance?

The following section will outline the research agenda used to provide answers for the above research hypothesis and questions.

Sample

The sample of this research is the CEO's and/or senior level management of the Banking and Savings and Loan industries in Louisiana. The main reason for the selection of one industry in one state is the hypothesis that the meanings attached to some of the perceptual variables by CEO's would be different in different industry settings. The choice of one industry would provide a consistent bias in the meanings attached to the variables. Given the nature of the study, a constraint of resources also mandated the use of one industry in one state.
The second reason for the justification of this sample is that in March, 1980, the Federal Government passed The Depository Institutions Deregulation and Monetary Control Act. This piece of legislation has led industry analysts (Business Week, 1980; McNeil-Lehrer Report, 1981) to conclude that the entire Depository Industry has been placed in a position where intense competition will prevail. Price competition, marketing competition and merger and acquisition tactics are predicted to be employed in this new competitive environment. These same analysts predict a shake out of marginal, less efficient firms or those that fail to take a proactive and aggressive strategic stance. With respect to this research, it is hypothesized that this turbulent industry would provide a rich sample for strategic research. TMT concern for scanning the environment and strategic response should be heightened in this new, partially deregulated setting.*

Being designed as a one industry study, the entire population of banks and Savings and Loans in the state was invited to participate in the study. The questionnaires were administered to the Savings and Loan industry (127 Savings and Loans) at a seminar on Alternative Mortgage Lending in New Orleans, Louisiana on July 23-24, 1981. This researcher lead the participants through the survey questionnaire (discussed below) in three one and one half hour periods over the two day period. This procedure produced 63 usable questionnaires representing 63 Savings and Loans. The entire Banking industry of Louisiana (264 banks) was invited by letter in September 1981 to

*Inspection of most of the open ended questions on the questionnaire that dealt with perceived threat, distinctive competence, etc. confirmed this hypothesis. The respondents were highly concerned about the deregulation of the industry.
participate in the research project. The invitation produced 92 institutions who agreed to participate. After two reminder letters, 44 usable questionnaires were produced and used in the analysis. Accordingly, a response rate of 52% for the S&L's and 17% for the Banks was produced. Inspection of the geographic distribution of the firms yielded a good dispersion around the state. Inspection of the size distribution of the sample S&L's showed good dispersion. However, the 44 usable banks are mostly small to medium size firms with the exception that the state's largest bank is included in the sample. As such, the size distribution is skewed toward the smaller end of the size scale for the banks.

In order to participate in the study, respondents were required to be part of the Top Management Team (TMT) that had authority for setting the strategic course of the firm. For the 44 Banks in the sample, the following breakdown of TMT (members occurred: 32 CEO's, 2 Executive V.P.'s, 2 Senior V.P.'s and 2 Assistant V.P.'s responded. For the 63 Savings and Loans in the Sample, the following breakdown of responding officers occurred - 27 CEO's, 10 Senior V.P.'s, 3 Executive V.P.'s, 13 V.P.'s, 7 Assistant V.P.'s and 3 Director/Attorneys. As such, the writer feels that those who responded to the questionnaire were those who in fact had strategy making authority and knowledge.

Model and Variables

Figure 2 depicts the variables and hypothesized relationships that were used, and tested for, in this research. Space precludes
an exhaustive explication of the variables.* Appendices A, B and C outline variable mnemonics and descriptions. While most of the variable descriptions are self-explanatory, some need a more detailed presentation.

The various diversity variables—the Diversity Index of Industries Paying Severance Tax and the Diversity Index of Employment by Industry for the Objective Task Environment and the Diversity Indices of Loans and Deposits for firm Actual Strategy—are rather new applications for this type of research. The Shannon-Weaver index of specific diversity (Pielou, 1966) was used to serve as a summary measure of diversity. The formula is as follows:

$$H' = -\sum_{i=1}^{s} p_i \log p_i$$

Where $H'$ is the diversity index and $p_i$ is the proportion of a "species" present in a sample for $i = 1, 2, \ldots, s$ species. According to Pielou, "The more species there are and the more nearly even their representation, the greater the uncertainty and hence the greater the diversity" (1966:463). Thus, the diversity index measures "richness" or how many species and "eveness" or the distribution across species. Since the data for severance taxes, employment and loans and deposits is assigned to a fixed number of categories, the diversity index for a

* This article will report, at a more aggregate level, the findings of this research. This level of generality is justified given the objective of the article which is to demonstrate the systemic qualities of Environment and Strategy. See Bigler (1982) for a detailed description of variable operationalization and sources.
given construct will really measure just eveness of distribution. In order to obtain a sensitive diversity index number then, as many categories (which will be constant for all the Parishes, Banks and S&L's respectively) as feasibly possible needed to be generated. For one example then, the $p_i$ would be the proportion of dollars in a specific type of loan or deposit account (the total number of loan and deposit types being the species) for $i = 1, 2, \ldots, s$ numbers of accounts. By stipulating $s$, the $\Sigma p_i$ would equal to 1.0.

The Objective Environment Dynamism variables also need more explicit attention. The five variables shown in Figure 2 all try to capture, objectively, some aspect of variability of the critical input resource for these two industries: deposits. Although this operationalization is close to Dess (1980), the fact that it measures variability of the critical input resource in addition to using time series regression statistics makes it a rather unique approach to the operationalization of Objective Environment dynamism.*

**Statistical Methods**

In the conduct of the research three multivariate techniques—factor analysis, canonical correlation, and multiple regression in this order—were used to reduce the variable pool and to test the research hypotheses. Multiple indicators of a given variable were measured and factor analysis was employed to develop index measures of

---

*Dess (1980) operationalized his objective environmental variables predominately around sales statistics. Sales can be thought of as outputs and not resource inputs. Our interpretation of Aldrich (1979) and Pfeffer and Salancik (1978) suggests that objective environment should be operationalized in terms of critical input resource(s).*
"dominant thrust." This procedure also hints at checking the internal reliability of the measures: variables will not load highly on a given factor if they are not sufficiently highly correlated. Canonical correlation, a rather new technique to strategic management research, was employed to gain a macro perspective on the behavior of the entire research model. While not as global as structural linear equations analysis (Bentler, 1980), the authors feel that canonical correlation does provide an interesting overall "feel" for the behavior in Figure 2. Finally, multiple linear regression was used to actually test the research hypotheses. This robust technique allows a more penetrating and rigorous analysis of the research hypotheses.

**FINDINGS**

Consistent with the theme of the paper only the canonical correlation exhibits and the findings of the test of Hypothesis 5 via regression analysis will be directly shown. A summary figure will outline the status of the other hypotheses however. In addition, the factor solution for the Objective Environment will be reported since these constructs are in one sense the starting or revolving point for the model.

**a. Factor Analysis Solutions**

Factor analysis (Nie, et al., 1975; Kim and Mueller, 1978) is a statistical-technique which enables the researcher to construct indices of two or more variables that are sufficiently correlated. As such, the technique can reduce a variable pool to a manageable set of underlying constructs—called factors. Various groups of variables from Figure 2 were subjected to factor analysis and factor scores were
generated (see Nie, et al., 1975 for a description of this procedure, even though the scores were actually generated using the SAS algorithm --see Helwig and Council, 1979) so that one number could represent each factor for each respondent in the sample. Appendices A, B and C contain the mnemonics and descriptions for the generated factors (see Bigler, 1982 for a detailed description of all of these factor solutions). As stated before though, Table 1 shows the Varimax rotated factor solution for the Objective Environment variables. As one can see, the three retained factors of Abundance, Dynamism and Growth account for 88% of the variation in the eleven variables. The Abundance factor is a qualified factor name because previously hypothesized diversity variables, TOTCOMP (the number of competitors in the task environment) and NUMBFIRMS (the number of tax reporting businesses in the task environment) loaded highly on what the authors called the Abundance factor. As Aldrich (1979: 69) has noted however, one can expect Abundant environments to be also Diverse environments.

The Dynamism factor is composed of two of the regression variation statistics, as hypothesized. Finally, an un-hypothesized Growth factor emerged from the analysis. Upon reflection, this occurrence is common sensical since the other variables of Objective Environment reflect states or levels and the growth variables represent rates or flows.

The remainder of the factor solutions showed good patterns and have, we feel, provided good indicators of "dominant thrust" (Bigler and Kedia, 1982). These are briefly described in the appropriate Appendices. If the reader is slightly puzzled so far by this admittedly cursory presentation, perhaps the canonical correlation findings
and analysis below will provide for the needed closure and clarity.

b. Canonical Correlation Findings

A Canonical Correlation analysis was performed using the six dimensions of the research model shown in Figure 2 for both the Banks and the Savings and Loans in the sample. Canonical Correlation is a statistical technique that measures the correlation between two groups of variables (Nie, et al., 1975:515). A typical Canonical Correlation formula would be as follows:

\[ a_1x_1 + a_2x_2 + a_3x_3 = b_1y_1 + b_2y_2 + b_3y_3 + b_4y_4 \]

where the a's and b's represent linear weights and the x's and y's represent variables in the two groups to be correlated. The algorithm proceeds in a manner such that a host of canonical functions are generated, the quantity of which is given by the number of variables in the smaller of the two groups. For example, from the equation above, three canonical functions would be generated by the algorithm because the left hand group has only three variables. The weights are generated in such a manner that the first function derived will produce the highest possible (and the most significant) correlation between the two groups of variables; the second function will produce the second highest correlation and so on. The Canonical Correlation was performed on the dimensions of the model in an attempt to give a global picture of the relationships between pairs of groups of variables.

1. Bank Canonical Correlation

Figure 3 shows the various Canonical Correlations for the
Banks between the six groups of variables (dimensions) in the research model. The number either above or to the left of a connecting line is the Canonical Correlation statistic and the number below or to the right of the connecting line represents the significance level of the correlation.

As one can see from Figure 3, the strongest links in the model that bear on Actual Performance, which is the ultimate interest in the study, come from the two antecedent objective dimensions of Objective Environment and Actual Strategy. The Canonical Correlation between Objective Environment and Actual Strategy is $r = 0.8619$ ($p < 0.0001$) and between Actual Strategy and Actual Performance, $0.4507$ ($0.0592$). The Canonical Correlation between Objective Environment and Actual Performance is $0.5586$ ($0.0452$). The highly significant Canonical Correlation at $0.6412$ between Actual and Perceived Performance is interesting as it suggests that the respondents' perceptions with respect to corporate performance are in agreement with actual performance. However, no causal relationship between Perceived Performance and Actual Performance is implied.* It appears, then, that the main contributions that will potentially explain Actual Performance will be the objective environment variables and the Actual Strategy variables. In rounding out our perusal of Figure 3, it is interesting to note that Actual Strategy, Perceived Environment, and Perceived Strategy are all significantly correlated to Perceived Performance. It is as if there are two structures of alignment that

*Although the converse can be argued. Since the index of Actual Performance includes a Four Year Average component in it, the historical information supplied by the Actual Performance Index can be said to partially explain Perceived Performance.
are taking place in the model. One alignment is with Actual Performance and one with Perceived Performance. This position is strengthened by the fact that there appears to be no significant relations between Objective and Perceived Environment and Actual and Perceived Strategy. Conjectures as to why this phenomenon has occurred will await their turn in the discussion and conclusions section, after the appropriate regression analyses have been presented and analyzed.

2. S & L Canonical Correlation

Figure 4, for the S&L's, presents the Canonical Correlations between the six dimensions of the research model. One of the most glaring and interesting aspects of the Canonical Correlations is the non-significant correlation between Actual Strategy and Actual Performance. Recall that for the Banks, this was a significant Canonical Correlation. There is a mildly significant Canonical Correlation for the S&L's between Objective Environment and Actual Performance. However, for the S&L's, where there was none for the Banks, there is a slightly significant Canonical Correlation between Perceived Strategy and Actual Performance. Evidently, if this is a meaningful relation, there is some information supplied by one or more of the Perceived Strategy variables that significantly relates to Actual Performance.

As with the Banks, there appears to be a second structure of alignment converging on Perceived Performance. Perceived Environmental Uncertainty is significantly related to Perceived Strategy and Perceived Strategy is significantly related to Perceived Performance. As with the Banks, there is no significant relationship between Objec-
tive Environment and Perceived Environmental Uncertainty and between Actual Strategy and Perceived Strategy. As stated before, this issue of dual alignment structures will be taken up in the discussion and conclusions section of this paper.

3. Summary Statement Concerning the Canonical Correlation

In this writer's opinion, the key features that distinguish the Canonical Correlation analysis of the S&L's from that of the Banks are:

1) There is no significant relation between Actual Strategy and Actual Performance for the S&L's and there is a significant relation for the Banks.

2) The Canonical Correlation between Objective Environment and Actual Performance for the Banks is higher and more significant than the Canonical Correlations between Actual Strategy and Actual Performance for the Banks. This would suggest that some Objective Environment variable(s) strongly influences individual Bank Actual Performance.

3) The Canonical Correlation between Objective Environment and Actual Performance for the Banks is higher and more significant than the Canonical Correlation between these same dimensions for the S&L's.

While one would be hard pressed to estimate the statistical significance of the differences outlined above, these same differences led the authors to make the following observation. It appears as if the strategic alignment of the Banks in their environments (both
strategy and environment measured objectively) is much stronger than that of the S&L's. When one observes that the link between Objective Environment and Actual Performance for the Banks is fairly strong and highly significant, one is led to the second conclusion that perhaps it is the tremendous market power and position* that the Banks have that makes their alignment between objective environment, strategy and performance seem to fit. In other words, it could be that given the way Actual Strategy is measured, the dominant market position the banks enjoy could effect alignment of strategy and actual performance. The Canonical Correlation points to a concept of dual alignment (discussed above). But, from another point of view, one could argue that in a power-position situation, perceptions are basically irrelevant. These ruminations will be taken up in the next section.

c. Regression Analysis Findings

Given the objective of this paper, only the regression results for the test of Hypothesis 5 for the Banks and S&L's will be directly shown. However, Figure 5 shows the authors' evaluation of each of the other research hypotheses. As can be seen, we feel that the diversity matching diversity type of hypothesis is, on the whole confirmed by

*A variable named Total Concentration Ratio was computed for each of the 64 parishes (task environments in this study). The ratio was defined as the total deposits of the top three institutions in each parish, regardless of institution type, divided by the grand total of deposits in the parish (sum of total S&L and Bank deposits). In almost every parish, the first and second largest firms of the top three firms were Banks. Secondly, a variable named Among Market Share (AMMKTSH) was computed. The ratio was defined as the deposits of the focal organization divided by the sum of total Bank and S&L deposits in the Parish. The S&L's had a mean AMMKTSH of 9.5% with a minimum value of .12% and a maximum of 34.12%. The Banks on the other hand had a mean AMMKTSH of 16.7% with a minimum value of .01% but a maximum of 100%.
the S&L findings, but not, on the whole, confirmed by the findings for the Banks. Why this phenomenon is so has been suggested by the results of the canonical correlation analysis: contingency alignments of the type tested for here do not seem to be salient for firms who enjoy a market power position. These conjectures will be taken up again in the discussion of the test of Hypotheses 5, below.

(1) Test of Hypothesis 5 for Banks

In reality, it is impossible to test Hypothesis 5 as it reads because the sample size is not large enough to assign firms to the High and Low categories of the various dimensions of Environment and Strategy and then to test for alignment. A form of this alignment hypothesis could be tested, though, by the following procedure: regress all of the variables of Environment and Strategy on the Index of Actual Performance using Stepwise Regression with a stringent entry criteria (.15). This would minimize the possibility of multicollinearity. If variables are found in the equation which represent the dimension of Environment and Strategy, with signs in the expected direction, the following can be concluded: a linear combination of variables which represents the dimensions of Environment and Strategy can explain an index of Actual Performance better than any single dimension. While this is not a pure test of the alignment hypothesis, it does lend credence to the position that there is something in the way these dimensions together describe reality (in this case Actual Performance) that is better than a single dimension alone can do. Of course, if variables primarily from either Environment or Strategy enter the final equation, then this would tend to disconfirm the alignment hypothesis.
Table 2 shows the four variables which meet the stepwise regression criteria.* The Index of Actual Performance (ACTPERFl) increases as EEDIVRS, OFFRATIO and BETA increase, but it increases as FULLOANS, the Self-Report Number of Loans Offered, decreases. As one would expect from the Canonical Correlation analysis (in Figure 3), the best linear combination of explanatory variables for ACTPERFl include variables mostly from Objective Environment. The only perceptual variable that enters the equation is FULLOANS, but it has a negative sign. The scenario suggested by this model is as follows: the firms in more Diverse (as measured by Employment Diversity) and Dynamic environments, but who have higher Office Ratios and are thereby in more concentrated environments (recall OFFRATIO and ONEFIRMC are highly correlated (.8148, Sign = .0001), and who perceive that they have restricted or narrow loan offerings, are higher performers than firms who are associated with the opposite of these attributes.

Statistically and practically, the model states that it is mainly a linear combination of Objective Environment variables that best accounts for ACTPERFl. Other dimensions and variables might have entered into the analysis without the dimensions of Objective Environment and Actual Strategy in the model. Given the dynamics of Stepwise Regression, though, no other variables explain more significantly the final model found above.** Given these arguments, this writer posits

*The same model was found using a stricter entry of .10, with the same stay criteria of .10.

**The reader will notice that this is a very conservative procedure. A General Linear Model approach could have been taken which would force all of the variables into the model, but the authors opted for a more conservative procedure.
the following conclusion: it is the relative condition that the Banks find themselves in that makes their competitive market power (as measured by OFFRATIO) one of the sole determinants of Actual Performance. The information supplied by FULLOANS, although it is a perceptual variable, supports this position. That is, a Bank in a relative power position can restrict the number of loan offerings and thereby perhaps concentrate only on the most profitable loan types. By this last piece of information, then, the interpretations of the previous hypotheses are supported. That is, it is in relatively concentrated environments, but ones which are more dynamic and diverse, that we see the non-use of diversity checking tactics that lead to higher profitability. It is clear, though, that it is the current concentrated power position that the Banks enjoy, and not any of the perceptual alignment measures that contingency theorists think are important, which best explains Actual performance.

(2) Test of Hypotheses 5 for S&L's

Table 3 shows the variables which significantly entered the stepwise regression equation* to explain ACTPERF1, the Index of Actual Performance. The equation is rather interesting with respect to at least two points:

1) Although the equation explains a relatively large amount of the variation in ACTPERF1, its interpretation is not straightforward. With the exception of FACTOR2 and BETA, all of the other variables that were entered are per-

*The reader is reminded that all of the variables in the model were entered into stepwise regression using a rather strict entry criterion of .10.
ceptual in nature. Evidently, this linear combination of variables provides for an adequate statistical model, but its practical significance may be hard to uncover.

2) None of the Objective Environment "Power" type variables (OFFRATIO and ONEFIRMC) enter the model, as they did for the Banks. The significance of this fact will be discussed in the Conclusions and Discussion section.

A literal translation of this equation, grouped in terms of like variables, would proceed as follows. ACTPERFl increases as FACTOR2 decreases, but it increases as BETA increases. Evidently it is the inter-parish variation type dynamism measure (FACTOR2) and not BETA, the inter-parish volatility measure, which is associated with environmental perturbations and with a deleterious influence on ACTPERFl.

ACTPERFl also increases as PCVUNPRl, the Factor which measures the Perceived Unpredictability of Government Behavior, increases, but increases as PCVUNPR4, the factor which measures the Perceived Unpredictability of Rates and Investments, decreases. This is a rather inconsistent and puzzling finding. A consistent interpretation of this finding will have to rely on a discussion of correlations that did not enter into the regression equation. PCVUNPRl is positively correlated to ENVSCANl (.2184, Significance = .0965), BOURGE31, the factor that measures the Perceived Importance of Sources of Funds and Cost Consciousness (.2930, significance .03310), and NGOALIMP,* the number of Goals-Means Items Thought to be Important (.2495, Sig-

*NGOALIMP, which did not enter the model.
nificance = .0567)—all of which are negatively related to ACTPERFl. Evidently, the perception of increased governmental unpredictability is associated with the use of uncertainty reducing tactics which have the effect of reducing ACTPERFl (probably due to the fact that these tactics consume resources in the short run).

ACTPERFl also increases as PCVABUN3, the factor which measures the Perceived Abundance of Staff Personnel, increases and as PCVDYNM1, the factor which measures the Index of Perceived Dynamism, increases. As with most of the variables that were entered, the interpretation of these variables is rather problematic. This writer can offer no indirect analysis by additional variable correlations, as was done above, to help infuse these findings with practical meaning.* This writer can posit the following bold hypothesis to explain this phenomenon. The rather obscure Objective Environmental variables and Perceived Environmental variables enter the equation in Table 3 to explain ACTPERFl in part because of the absense of a dominant market position. As such, what is reported in Table 3 probably has some spurious correlation associated with it.** The $R^2$ value is thus overstated with respect to what a more lean equation, with only FACTOR2 and ENVSCAN1 represented, would produce. The implications of this hypothesis will be examined in the following Discussion and Conclusions section.

*Although there is some statistical relation.

**This is confirmed by the fact that FACTOR2 and ENVSCAN1 are the only variables in Equation 1 which have bivariate correlations with ACTPERFl that are reasonably high (.3072 and .3869 respectively) and significant (.0143 and .0017 respectively).
DISCUSSION

The first major idea from the research indicates that the kind of alignments contingency theorists posit (Environment-Strategy-Performance, both in perceived and actual terms) become salient only in environments and markets that are less concentrated and, by extension, where less powerful firms (low market shares) vie for competitive viability. The logic for the position gets some support from current literature (Pfeffer and Salancik, 1978, and Aldrich, 1979) but the writer has implicitly invoked another construct (market power position) to make sense of this interpretation. The argument runs as follows:

1. Both Pfeffer and Salancik (1978) and Aldrich (1979) argue that greater uncertainty is caused by higher environmental concentration (which can cause dependence of some organizations on others), and higher interconnectedness or interdependence which causes greater turbulence and instability. All of these features can be problematic for the focal organization by lessening the probability of the firm to be able to control its own destiny. However, Aldrich (1979:69-71) posits that higher turbulence is also caused by higher abundance (capacity) in environments which leads to higher diversity. As the findings of this research show though, one measure of diversity (as measured by 1-ONEFIRM) is positively correlated with the Objective Environment Abundance Factor. Pfeffer and Salancik (1978) provide some support for dealing with this conundrum. They posit that "System connectedness, then, is a substitute for concentration in that both assure predictability and provide increasingly powerful levers for change" (1978:70). This system
connectedness is negotiated by such mechanisms as joint ventures, trade association activity, coalitions and cartels (1978:175-182), to name a few. The point is that firms move to "concentrate" problematic environments either through mechanisms to enhance system connectedness or through outright moves to improve concentration (mergers, acquisitions, etc.). Seemingly, both of these movements can operate at the same time* or conceivably they could be opposed to one another. That is, greater diversity might spell disaster for attempts to concentrate an industry.

2. The proposition above is predicated on the fact that for the Banks, who are held by the writer to be in the dominant power position in the industry, mostly objective variables explain ACTPERF1. While these objective variables (of Objective Environment and Actual Strategy) do form a type of linkage, they do not support a diversity matches diversity hypothesis where contingency theorists posit that the perceptual type variables should be integral in the overall linkage process (Slocum and Hellriegel, 1979). Aldrich (1979:122-125) argues that this tendency to view perceptual variables as important in the alignment process results from a commitment to a rational selection view versus an environmental selection viewpoint. In the Rational Selection model (Child, 1972) actors are held to be able to have a control over their destiny: therefore, their perceptions of critical contingencies ought to at least be a part of decision processes, if not help to rationally guide them. In the

*Indeed, recall that the Abundance Factor has a previously hypothesized Diversity Component (Number of Competitors) in it. Presumably, the mechanisms of system connectedness would be found in environments of greater diversity.
Environmental Selection model, perception and rational choice, in the strong form of this argument, are completely irrelevant. Firms and their strategies are selected for by certain selection criteria in the environment: firms with "fit" strategies are selected for, those with unfit strategies are selected against. To return to the argument at hand, one does not know for the Banks whether the strategies which lead to market dominance were rationally chosen, or whether their dominance was a result of social sanction and legal decree which "selected" for the Banks without their active commission. For the S&L's, on the other hand, their lower power position made possible the entry of largely perceptual variables into the regression model that explains ACTPERFL. Aldrich (1979:68) has posited that "...position in the environment becomes important in the selection process when elements are concentrated rather than dispersed." The writer argues that since the S&L's lack a power position, on average, in the industry, perceptual alignment variables have the occasion to enter the model. Aside from the everpresent possibility of spurious correlation here, one can assume that since the S&L's lack a very critical ingredient--power position--in a rather concentrated environment, perceptual alignment type variables are everpresent on the respondents minds. In other words, if firms in less concentrated environments ought to provide for the proper alignment of Environment and Strategy—(both actual and perceptual), then the Banks in this sample can ignore these prescriptions and still be high performing. So it seems that market power position is a moderating construct allowing for greater or lesser importance or salience of perceiving environments. A strong power position could make for lesser
importance being placed on accurately perceiving environmental contingencies, as the interpretation here has suggested. Pfeffer and Salancik (1978:62) have argued "Important elements of the environment may be invisible to organization decision-makers, and hence, not considered in determining organizational actions, but these same elements can affect organizational success or failure." For the Banks in this sample, market power position, as measured by ONEFIRM, AMMK, and MKTSHARE, are posited by the writer to be those elements in the environment which have made for perceptual dynamics to be relatively less important. This position is certainly in the spirit of the slack resources argument which prompted Hypotheses 5 (Bourgeois, 1981; Cyert and March, 1963:36-38). Khandwalla (undated:55) provides support for this argument by positing that it is only in more competitive environments that such things as tolerance for change and ambiguity become important for the organization and that in these environments small (less powerful firms) are unlikely to survive. Parker (1981) has argued for the perceptual and objective alignment position for Banks. However, Parker implicitly assumed that with the deregulation of the industry all Bank environments would become more competitive at similar velocities. The Banks in this sample for 1981 still appear to enjoy a relative power position to that of the S&L's.* By inference, it would seem to behoove already powerful firms to attempt to maintain a relative power position wherever possible (Porter, 1980). For the

*Most industry analysts expect that this situation will change, certainly by 1986, when the industry is expected to be completely deregulated (Business Week, 1982).
two industries in this study, given the fact of their deregulation, feasible alternatives for this end would be lobbying activity and aggressive geographic expansion by merger and acquisition, subject to antitrust type considerations (Pfeffer and Salancik, 1978; Aldrich, 1979). These tactics would of course consume scarce resources. Conversely, it would also appear that as environmental conditions get less concentrated and perhaps more competitive (recall that ONEFIRMC and FACTOR1 are negatively correlated), firms would find it expedient to provide for the proper objective and perceptual alignments. The precise nature of these alignments for this type of industry cannot be exhaustively enumerated by this research. However, feasible alternatives would include environmental scanning activity (Jemison, 1981), distinctive competence-image building for older but less powerful (lower market share) firms and other market share building activities (Hammermesh, Anderson, and Harris, 1978). These alignment activities would also certainly expend resources. However, if the findings of this study for the S&L's are valid, it would appear that providing for alignment in more competitive environments would eventually lead to higher Actual Performance.* (See the PIMS research, Schoeffler, Buzzell and Heany, 1974; Buzzell, Gale and Sultan, 1975, for the same argument for expending current resources to build market share.) An interesting trade off emerges from the two sets of costs outlined above: is it better to expend resources to maintain a relative power position or to expend resources to

*The reader is reminded that this is really a conjecture since a practical, straightforward interpretation of the test of Hypothesis 6 for the S&L's is problematic.
provide for necessary contingency alignment?* Obviously, these
decisions would never be totally bifurcated. But a propensity for one
avenue over another would perhaps be determined by the firm's current
position—old or new? small or large?—and perceptions on how rapidly
the task environment will become more competitive. As with Porter
(1980), though, the advantage would probably lie in building the
relative power position through erecting barriers to entry or other
interdependence management strategies and tactics. For the firms who
can build entry barriers (i.e., those already in the industry),
environmental conditions are known to be relatively benevolent.
However, the analogies to erecting entry barriers, neutralizing the
power of "buyers" and "suppliers,"** and dampening the threat of
substitute products—tactics to insure a relative power position—have
not been studied yet for service-type industries.

The second major contribution that emanates from this research
is the fact that a concept of dual Environment-Strategy-Alignment
might describe reality better for some firms than for others. It
might also serve to clarify some of the conflicting findings in
previous research of Perceived Environment.

Largely unattended to in the Analysis section was the sig-
nificance of the positive Canonical Correlations of various dimensions
with Perceived Performance. The writer is moved to wonder whether it

*Recall that creating a market power position as has been
presented and argued for here, is to provide for a type of Environ-
ment-Strategy linkage. This type of linkage does not respect the
diversity matches diversity hypothesis that contingency theorists
posit however.

*The terms "buyers" and "suppliers" as Porter (1980) uses them
are not wholly appropriate for this kind of industry.
is for nothing that these alignments occur.

Why do these linear combinations of variables account for so much of the variance in perceived performance? Since the Banks are a more dramatic example with respect to this question, the comments below will pertain mostly to them. Aside from the possibility that some spurious correlation exists, the writer can posit the following argument. To reiterate, it seems that, for the Banks, the Perceptual measures of Environment, Strategy and Performance form a linkage system that is distinct from the Actual linkage.* This writer would argue that this separate perceptual linkage system could provide management with an internally consistent "mind-set," so to speak, part of which could be associated with current Actual Performance but another part which might not produce actual impact for several time periods hence. Pfeffer and Salancik (1978:16) have posited that a ubiquitous need for understanding the dynamics of social environments exists in the minds of top level decision-makers. This internally consistent "mind-set" could provide for a necessary perception of wholeness or closure which may or may not be related to current Actual Performance. As such, these current perceptual linkages could foment and mature so to speak, only to effect actual performance some time in the future. Newer research which delves into managerial ideology (Starbuck, 1982 and Miller, undated) conceptually supports this speculation. On the other hand, a current cross sectional picture of this "mind-set" may also never become to be associated with actual

*The writer has described these as distinct linkages because of the fact that the Canonical Correlation Analysis for both the Banks and the S&L's showed no correlations between Objective and Perceived Environment or Actual and Perceived Strategy.
performance in the future. Changing environmental conditions could cause a TMT to "forget" a current mind-set as they struggle to form a new one. By introducing a longitudinal aspect to these perceptual linkages, perhaps some of the inconsistencies in the Perceived Environment research could be accounted for. Unfortunately, the findings for the S&L's obscure this position somewhat. However, the writer feels that the "dual alignment" construct is valid and would provide for some interesting future research.*

CONCLUSION

The objective of this paper was to demonstrate that Environment and Strategy can be construed and examined as a fundamental and insoluble system. What emerged was a rather descriptive argument for this position: the findings of the research suggest that viewing these constructs as a system gives us knowledge that possibly would not have been forthcoming otherwise. Implicit in this position is the need to work on the "whole" of the system, so that its integrity can become manifest.

However, this descriptive argument is not the same as a prescriptive argument where hypothesized causal laws and a persuasive conceptual "ground" are presented. If this search for "strategic

*See Ansoff (1979) for a similar bifurcation of 1) competitive strategy (products, markets, etc.) and 2) legitimacy strategy (managing corporate social response). Although these two categories are different from the ones discussed above, they are similar to the dual-alignment hypothesis in the sense that it charges top management with the responsibility of developing strategies that may in the short run be in conflict with each other or at least vie for possibly scarce resources.
system integrity" is warranted, we feel that the field awaits a particularly analytic and creative mind to supply some initial advances.
REFERENCES


Attributes of Environments

- Munificence  No Correlation
  or
  (No Correlation)

- Diversity

- Dynamism

Results in

Perceived Environmental Uncertainty


FIGURE 1

Determinants of Perceived Environmental Uncertainty
Task Environment (Objective)

- Factor(s) Comprising
  1. 1980 Total Parish Deposits
  2. Number of Parishes
  3. Diversity Index of Populations
  4. Growth Rate in Total Parish Deposits

Diversity (H Factor(s))

- Factor Comprising
  1. Total Concentration Ratio
  2. Number of Competition in Parish
  3. Diversity Index of Industries
  4. Diversity Index of Employment by Industry

Dynamism

- Factor Comprising
  1. SES of Total Parish Deposits Regressed on Time
  2. SES of Total Parish Deposits Regressed on Time
  3. Beta Analysis of Parish Deposits Regressed on State Deposits
  4. SES of Parish Deposits Regressed on State Deposits
  5. Coefficient of Variation of Parish Deposits Regressed on State Deposits

Perceived Environmental Uncertainty (PEU)

- Factor Comprising
  1. Unpredictability and Change
  2. External Threat
  3. Dynamics
  4. Anticipation
  5. Competitive Diversity

Perceived Environment

Strategy

- Factor(s) Comprising
  1. Diversity Index of Loans
  2. Diversity Index of Deposits
  3. Geographic Dispersion: Office Ratio

Performance

- Factor(s) Comprising
  1. Four Year Average
  2. Return on Rests
  3. Return on Average Assets

Source: Primary.
FIGURE 3
BANK CANONICAL CORRELATION SUMMARY

Objective Environment (.7949
Perceived Environment (.8230)
Actual Strategy (.7673
Perceived Strategy (.5073*
Perceived Performance (.8003*
Actual Perform (.6786
Actual Perform (.6412*
Perceived Performance (.8182*

Source: Primary
FIGURE 4
SAVINGS AND LOAN CANONICAL CORRELATION SUMMARY

Objective Environment  .8900*  Actual Strategy  .1725
                      0.001

(0.6897  0.8387)
(0.6622  0.8136)
(0.6113  0.8073)

Perceived Environment  .8986*  Perceived Strategy  .7922*
                      0.0226  0.0128

(0.6295  0.0901)

Actual Perform  .7758
                 (0.4208*  0.0032)

Perceived Performance

Source: Primary
FIGURE 5
SUMMARY STATUS OF THE FIVE RESEARCH HYPOTHESES

Banks:
Hypothesis 1: Largely Disconfirmed
Hypothesis 2: Largely Disconfirmed
Hypothesis 3: Tentatively Confirmed
Hypothesis 4: Largely Disconfirmed
Hypothesis 5: Not Testable as Stated. Some Evidence for a Type of Alignment, However.

Savings and Loans:
Hypothesis 1: Largely Disconfirmed due to low $R^2$ values. However, Most of the Variables that Enter are Conceptually Appropriate and the $r$ Signs are in the Right Direction.
Hypothesis 2: Mixed Results: Tentatively Confirmed, Though
Hypothesis 3: Disconfirmed - No Significant Variables Entered a Model
Hypothesis 4: Tentatively Confirmed
Hypothesis 5: Not Testable as Stated. Some Evidence for a Type of Alignment, However.
<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abundance</strong></td>
<td><strong>Dynamism</strong></td>
<td><strong>Growth</strong></td>
<td><strong>TOTAL PARISH DEPOSITS</strong></td>
</tr>
<tr>
<td>TOTPARDE</td>
<td>*0.96956</td>
<td>-0.12326</td>
<td>-0.12807</td>
</tr>
<tr>
<td>PARSHPOP</td>
<td>*0.97686</td>
<td>-0.13224</td>
<td>0.03926</td>
</tr>
<tr>
<td>PARDEGRO</td>
<td>-0.14425</td>
<td>0.03114</td>
<td>*0.75942</td>
</tr>
<tr>
<td>PARPOPGRO</td>
<td>0.07332</td>
<td>-0.04469</td>
<td>*0.81995</td>
</tr>
<tr>
<td>COVEMP</td>
<td>*0.97891</td>
<td>-0.10120</td>
<td>-0.08356</td>
</tr>
<tr>
<td>NUMBFIRMS</td>
<td>*0.98223</td>
<td>-0.13499</td>
<td>0.00817</td>
</tr>
<tr>
<td>WAGEPAID</td>
<td>*0.90144</td>
<td>-0.09129</td>
<td>-0.12625</td>
</tr>
<tr>
<td>TOTCOMP</td>
<td>*0.91162</td>
<td>-0.21063</td>
<td>-0.11493</td>
</tr>
<tr>
<td>STDERORB-T</td>
<td>*0.85180</td>
<td>-0.13272</td>
<td>0.17502</td>
</tr>
<tr>
<td>STDERORB-S</td>
<td>-0.17687</td>
<td>*0.98405</td>
<td>0.00368</td>
</tr>
<tr>
<td>COEVAR</td>
<td>-0.17446</td>
<td>*0.98386</td>
<td>-0.02087</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Eigenvalue</strong></th>
<th><strong>Percent of Total Variance Explained</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.274</td>
<td>57.00</td>
</tr>
<tr>
<td>2.071</td>
<td>18.80</td>
</tr>
<tr>
<td>1.334</td>
<td>12.10</td>
</tr>
<tr>
<td>9.679</td>
<td>88.00</td>
</tr>
</tbody>
</table>

* Star to the left of variable loadings indicates variables which have met a .50 cutoff point.
TABLE 2

TEST OF HYPOTHESIS 5 FOR BANKS

EQUATION 1:

\[
\text{ACTPERF1} = -3.8565 + 5.2822(\text{EEDIVRS}) \\
F = 4.55 \\
(.0411) \\
+ 2.7000(\text{OFFRATIO}) \\
F = 8.66 \\
(.0062) \\
- .2568(\text{FULLOANS}) \\
F = 19.13 \\
(.0001) \\
+ .1083(\text{BETA}) \\
F = 3.06 \\
(.0902)
\]

\[R^2 = .4871\]  
\[F = 7.12\]  
\[P(F) = .0004\]
### TABLE 3

**TEST OF HYPOTHESIS 5 FOR S&L's**

**EQUATION 1:**

\[
\text{ACTPERF1} = -0.4456 - 0.4931(\text{FACTOR2}) - 0.4605(\text{BOURGE31}) - 0.5296(\text{ENVSCAN1}) + 0.2852(\text{PCVABUN3}) \\
F = 5.97 \quad F = 10.62 \quad F = 21.35 \quad F = 5.14 \quad \text{R}^2 = 0.5808 \\
(0.0194) \quad (0.0024) \quad (0.0001) \quad (0.0292) \quad \text{P}(F) = 0.0001
\]

\[
+ 0.3872(\text{PCVUNPR1}) - 0.3059(\text{PCVUNPR4}) + 0.3206(\text{PCVDYNM1}) + 0.1733(\text{BETA}) \\
F = 8.32 \quad F = 5.44 \quad F = 5.83 \quad F = 3.16 \\
(0.0064) \quad (0.0251) \quad (0.0207) \quad (0.0837)
\]
APPENDIX A

LIST OF OBJECTIVE ENVIRONMENT VARIABLE MNEMONICS AND DESCRIPTIONS

A. The following variables comprise FACTOR1-FACTOR3:

1. FACTOR1 (Munificence)
   a. TOTPARDE = 1980 Total Parish Deposits (S&L's + Banks)
   b. PARSHPOP = 1980 Total Parish Population
   c. COVEMP = 1980 Average Covered Employment (Average Employment in Establishments Covered by the Louisiana Employment Security Law)
   d. NUMBFIRMS = 1979 Number of Establishments Filing Employer's Quarterly Federal Tax Return, Treasury Form 941
   e. WAGEPAID = 1980 Total Wages Paid in Establishments Covered by the Louisiana Employment Security Law
   f. TOTCOMP = Total Number of S&L's and Banks in the Parish
   g. STDERORB-T = Standard Error of Beta for the Parish Time Regression

2. FACTOR2 (Dynamism)
   a. STDERORB-S = Standard Error of Beta for the Parish-State Regression
   c. COEFVAR = Coefficient of Variation for the Parish-State Regressions

3. FACTOR3 (Growth)
   a. PARDEGRO = 1972-1980 Growth in Total Parish Deposits
   b. PARPOPGRO = 1972-1980 Growth in Total Parish Population

4. The following variables are Objective Environment Variables which were dropped from the Factor Analysis, but which were included in subsequent analyses.
   a. ONEFIRMC = One Firm Concentration Ratio (Highest One Firm Deposits in Parish (either Bank or S&L) / Total Bank and S&L Deposits
   b. ONEFIRMD = One Firm Diversity (1 - ONEFIRMC)
   c. EEDIVRS = Parish Employment Diversity Index
   d. TAXDIVRS = Parish Severance Tax Diversity Index
   e. BETA = Objective Environment Volatility Type Dynamism Measure
APPENDIX B
LIST OF VARIABLE MNEMONICS AND DESCRIPTIONS FOR BANKS

MAIN ANALYSIS VARIABLES:

PCVUNPR1 = Perceived Government Unpredictability Factor
PCVUNPR2 = Perceived Competitor and Sources of Funds Unpredictability Factor
PCVUNPR3 = Perceived Financial Rates and Supply of Investments Unpredictability Factor
PCVUNPR4 = Perceived Sources and Uses of Funds Unpredictability Factor
PCVUNPR5 = Perceived Customer Demand for Services Unpredictability Factor
PCVABUN1 = Perceived Abundance of Line Personnel Factor
PCVABUN2 = Perceived Abundance of Staff Personnel Factor
PCVTHRT1 = Perceived Competitor Threat Factor
PCVTHRT2 = Perceived Externality Threat Factor
PCVDVRS1 = Perceived Competitor and Market Diversity Factor
PCVDYNM1 = Perceived Services Dynamism Factor
PCVDYNM2 = Perceived Technological and Deposit Trends Dynamism Factor
ENVSCAN1 = Perceived Environmental Scanning Factor
ENVSCAN2 = Perceived Competitor and Client Scanning Factor
PCVPERF1 = Perceived Performance - "Financial" Factor
PCVPERF2 = Perceived Performance - "Soft-Performance" Factor
ACTPERF1 = Index of Actual Performance Factor

CONSTRUCT FOR CANONICAL CORRELATION:
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Environment
Perceived Strategy
Perceived Strategy
<table>
<thead>
<tr>
<th>Mnemonic</th>
<th>Description</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOURGE11</td>
<td>Perceived Importance of Firm Image and Employee Development Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE12</td>
<td>Perceived Importance of Sources and Uses of Funds Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE13</td>
<td>Perceived Importance of Marketing for Penetration Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE21</td>
<td>Perceived Importance of Community Enhancement by Competitive Tactics Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE22</td>
<td>Perceived Importance of Image Maintenance Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE31</td>
<td>Perceived Importance of Financial and Market Power Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE41</td>
<td>Perceived Importance of External Relations Factor</td>
<td>Perceived</td>
</tr>
<tr>
<td>BOURGE42</td>
<td>Perceived Importance of Sources and Uses of Funds for Market Penetration</td>
<td>Perceived</td>
</tr>
<tr>
<td>ONEFIRMC</td>
<td>One Firm Concentration Ratio</td>
<td>Objective</td>
</tr>
<tr>
<td>ONEFIRMD</td>
<td>One Firm Diversity</td>
<td>Objective</td>
</tr>
<tr>
<td>EEDIVRS</td>
<td>Parish Employment Diversity Index</td>
<td>Objective</td>
</tr>
<tr>
<td>TAXDIVRS</td>
<td>Parish Severance Tax Diversity Index</td>
<td>Objective</td>
</tr>
<tr>
<td>BOUNDSPAN</td>
<td>Perceived Propensity to Boundary Spanning Activity</td>
<td>Perceived</td>
</tr>
<tr>
<td>LOANDIV</td>
<td>Diversity Index of Firm Loan Categories</td>
<td>Actual</td>
</tr>
<tr>
<td>DEPOSIDIV</td>
<td>Diversity Index of Deposit Categories</td>
<td>Actual</td>
</tr>
<tr>
<td>OFFRATIO</td>
<td>Number of Firm Offices/Total Bank Offices in Parish</td>
<td>Actual</td>
</tr>
<tr>
<td>TOTOFFRATIO</td>
<td>Number of Firm Offices/Total Bank + S&amp;L Offices in Parish</td>
<td>Actual</td>
</tr>
<tr>
<td>FULLOANS</td>
<td>Self-Report Number of Loan Types Offered</td>
<td>Perceived</td>
</tr>
</tbody>
</table>
LIST OF VARIABLE MNEMONICS AND DESCRIPTIONS FOR BANKS (Continued)

FULLACNT = Self-Report Number of Deposit Types Offered
FULLSERV = Self-Report Number of Services Offered
HIADVERT = Self-Report Number of Advertising Media Used
NGOALIMP = Count of Goals-Means Items Scored at Important and Very Important
FACTOR1 = Objective Environment Munificence Factor
FACTOR2 = Objective Environment Variation Type Dynamism Factor
FACTOR3 = Objective Environment Growth Factor
BETA = Objective Environment Volatility Type Dynamism Variable

Other Variables
PCVGENCD = Perceived General Conditions of Environmental Uncertainty, Stability and Unpredictability
ENVTHRT = Perceived General Threat from the Environment
TOTDEPOS = Total Firm Deposits (Savings)
MKTSHARE = Firm Deposits/Total Bank Deposits in Parish
AMMKTSH = Firm Deposits/Total Bank and S&L Deposits in Parish
APPENDIX C

LIST OF VARIABLE MNEMONICS AND DESCRIPTIONS FOR S&L'S MAIN ANALYSIS VARIABLES:

<table>
<thead>
<tr>
<th>Mnemonic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCVABUN1</td>
<td>Perceived Abundance of Line Personnel Factor</td>
</tr>
<tr>
<td>PCVABUN2</td>
<td>Perceived Resource Abundance Factor</td>
</tr>
<tr>
<td>PCVABUN3</td>
<td>Perceived Abundance of Staff Personnel Factor</td>
</tr>
<tr>
<td>PCVUNPR1</td>
<td>Perceived Governmental Unpredictability Factor</td>
</tr>
<tr>
<td>PCVUNPR2</td>
<td>Perceived Competitor and Client Unpredictability Factor</td>
</tr>
<tr>
<td>PCVUNPR3</td>
<td>Perceived Loan Demand Unpredictability Factor</td>
</tr>
<tr>
<td>PCVUNPR4</td>
<td>Perceived Rates and Investments Unpredictability Factor</td>
</tr>
<tr>
<td>PCVTHRT1</td>
<td>Perceived Market Competitive Threat Factor</td>
</tr>
<tr>
<td>PCVTHRT2</td>
<td>Perceived External Threat Factor</td>
</tr>
<tr>
<td>PCVDVRS1</td>
<td>Perceived Diversity Factor</td>
</tr>
<tr>
<td>PCVDYNM1</td>
<td>Perceived Dynamism Factor</td>
</tr>
<tr>
<td>ENVSCAN1</td>
<td>Perceived Environmental Scanning Factor</td>
</tr>
<tr>
<td>PCVPERF1</td>
<td>Perceived Performance - &quot;Financial&quot; Factor</td>
</tr>
<tr>
<td>PCVPERF2</td>
<td>Perceived Performance - &quot;Soft-Performance&quot; Factor</td>
</tr>
<tr>
<td>ACTPERF1</td>
<td>Index of Actual Performance Factor</td>
</tr>
<tr>
<td>BOURGE11</td>
<td>Perceived Importance of Market Competitive Tactics Factor</td>
</tr>
<tr>
<td>BOURGE12</td>
<td>Perceived Importance of External Relations Factor</td>
</tr>
<tr>
<td>BOURGE13</td>
<td>Perceived Importance of Means to Enhance Customer Service Factor</td>
</tr>
<tr>
<td>BOURGE21</td>
<td>Perceived Importance of Financial Strength and Market Leadership</td>
</tr>
</tbody>
</table>

CONSTRUCT FOR CANONICAL CORRELATION:

<table>
<thead>
<tr>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Environment</td>
</tr>
<tr>
<td>Perceived Strategy</td>
</tr>
</tbody>
</table>
LIST OF VARIABLE MNEMONICS AND DESCRIPTIONS FOR S&L'S (Continued)

BOURGE31 = Perceived Importance of Sources of Funds and Cost Consciousness

BOURGE41 = Perceived Importance of Profit and Strength to Maneuver

BOURGE42 = Perceived Importance of Means to Enhance Competitive Manoevers

ONEFIRMC = One Firm Concentration Ratio

ONEFIRMD = One Firm Diversity (1 - ONEFIRMC)

EEDIVRS = Parish Employment Category Diversity Index

TAXDIVRS = Parish Severance Tax Diversity Index

BOUNDSPN = Perceived Propensity to Boundary Spanning Activity

LOANDIV = Diversity Index of Firm Loan Categories

DEPOSDIV = Diversity Index of Deposit Categories

OFFRATIO = Number of Firm Offices/Total S&L Offices in Parish

TOTFFRATIO = Number of Firm Offices/Total S&L + Bank Office in Parish

FULLOANS = Self-Report Number of Loan Types Offered

FULLACNT = Self-Report Number of Deposit Types Offered

FULLSERV = Self-Report Number of Services Offered

HIADVERT = Self-Report Number of Advertising Media Used

NGOALIMP = Count of Goals-Means Items Scored at Important and Very Important

FACTOR1 = Objective Environment Munificence Factor

FACTOR2 = Objective Environment Variation Type Dynamism Factor

FACTOR3 = Objective Environment Growth Factor
LIST OF VARIABLE MNEMONICS AND DESCRIPTIONS FOR S&L’S (Continued)

BETA = Objective Environment Volatility Type
      Synamism Variable

OTHER VARIABLES:

PCVGENDC = Perceived General Conditions of
          Environmental Uncertainty, Stability and
          Unpredictability

ENVTHRT = Perceived General Threat from the
          Environment

TOTDEPOS = Total Firm Deposits (Savings)

MKTSHARE = Firm Deposits/Total S&L Deposits in Parish

AMMKTSH = Firm Deposits/Total S&L and Bank Deposits
          in Parish
The following papers are currently available in the Edwin L. Cox School of Business Working Paper Series.

79-100 "Microdata File Merging Through Large-Scale Network Technology," by Richard S. Barr and J. Scott Turner

79-101 "Perceived Environmental Uncertainty: An Individual or Environmental Attribute," by Peter Lorenzi, Henry P. Sims, Jr., and John W. Slocum, Jr.


80-100 "Implementing the Portfolio (SBU) Concept," by Richard A. Bettis and William K. Hall

80-101 "Assessing Organizational Change Approaches: Towards a Comparative Typology," by Don Hellriegel and John W. Slocum, Jr.

80-102 "Constructing a Theory of Accounting--An Axiomatic Approach," by Marvin L. Carlson and James W. Lamb

80-103 "Mentors & Managers," by Michael E. McGill

80-104 "Budgeting Capital for R&D: An Application of Option Pricing," by John W. Kensinger

80-200 "Financial Terms of Sale and Control of Marketing Channel Conflict," by Michael Levy and Dwight Grant


80-301 "Controlling the Performance of People in Organizations," by Steven Kerr and John W. Slocum, Jr.

80-400 "The Effects of Racial Composition on Neighborhood Succession," by Kerry D. Vandell


80-801 "Comparison of the EEOCC Four-Fifths Rule and A One, Two or Three σ Binomial Criterion," by Marion Gross Sobol and Paul Ellard

80-900 "Bank Portfolio Management: The Role of Financial Futures," by Dwight M. Grant and George Hempel

80-902 "Hedging Uncertain Foreign Exchange Positions," by Mark R. Eaker and Dwight M. Grant

80-111 "Sources of Performance Differences in Related and Unrelated Diversified Firms," by Richard A. Bettis

80-112 "The Information Needs of Business With Special Application to Managerial Decision Making," by Paul Gray

80-113 "Diversification Strategy, Accounting Determined Risk, and Accounting Determined Return," by Richard A. Bettis and William K. Hall

80-114 "Toward Analytically Precise Definitions of Market Value and Highest and Best Use," by Kerry D. Vandell

80-115 "Person-Situation Interaction: An Exploration of Competing Models of Fit," by William F. Joyce, John W. Slocum, Jr., and Mary Ann Von Glinow

80-116 "Correlates of Climate Discrepancy," by William F. Joyce and John Slocum

80-117 "Alternative Perspectives on Neighborhood Decline," by Arthur P. Solomon and Kerry D. Vandell

80-121 "Project Abandonment as a Put Option: Dealing with the Capital Investment Decision and Operating Risk Using Option Pricing Theory," by John W. Kensinger

80-122 "The Interrelationships Between Banking Returns and Risks," by George H. Hempel

80-123 "The Environment For Funds Management Decisions In Coming Years," by George H. Hempel

81-100 "A Test of Gouldner's Norm of Reciprocity In A Commercial Marketing Research Setting," by Roger Kerin, Thomas Barry, and Alan Dubinsky

81-200 "Solution Strategies and Algorithm Behavior in Large-Scale Network Codes," by Richard S. Barr

81-201 "The SMU Decision Room Project," by Paul Gray, Julius Aronofsky, Nancy W. Berry, Olaf Helmer, Gerald R. Kane, and Thomas E. Perkins

81-300 "Cash Discounts To Retail Customers: An Alternative To Credit Card Performance," by Michael Levy and Charles Ingene

81-400 "Merchandising Decisions: A New View of Planning and Measuring Performance," by Michael Levy and Charles A. Ingene


81-600 "Managerial Uncertainty and Performance," by H. Kirk Downey and John W. Slocum, Jr.

81-601 "Compensating Balance, Rationality, and Optimality," by Chun H. Lam and Kenneth J. Boudreaux


81-800 "The Chinese-U.S. Symposium On Systems Analysis," by Paul Gray and Burton V. Dean


81-900 "Forecasting Industrial Bond Rating Changes: A Multivariate Model," by John W. Peavy, III

81-110 "Improving Gap Management As A Technique For Reducing Interest Rate Risk," by Donald G. Simonson and George H. Hempel


81-112 "The Significance of Price-Earnings Ratios on Portfolio Returns," by John W. Peavy, III and David A. Goodman

81-113 "Further Evaluation of Financing Costs for Multinational Subsidiaries," by Catherine J. Bruno and Mark R. Eaker

81-114 "Seven Key Rules For Successful Stock Market Speculation," by David Goodman

81-115 "The Price-Earnings Relative As An Indicator of Investment Returns," by David Goodman and John W. Peavy, III


81-117 "Sequential Information Dissemination and Relative Market Efficiency," by Christopher B. Barry and Robert H. Jennings

81-118 "Modeling Earnings Behavior," by Michael F. van Breda


81-120 "The Price-Earnings Relatives - A New Twist To The Low-Multiple Strategy," by David A. Goodman and John W. Peavy, III.
<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-100</td>
<td>&quot;Risk Considerations in Modeling Corporate Strategy,&quot; by Richard A. Bettis</td>
<td></td>
</tr>
<tr>
<td>82-103</td>
<td>&quot;A Typology of Small Businesses: Hypothesis and Preliminary Study,&quot; by Neil C. Churchill and Virginia L. Lewis</td>
<td></td>
</tr>
<tr>
<td>82-104</td>
<td>&quot;Imperfect Information, Uncertainty, and Credit Rationing: A Comment and Extension,&quot; by Kerry D. Vandell</td>
<td></td>
</tr>
<tr>
<td>82-200</td>
<td>&quot;Equilibrium in a Futures Market,&quot; by Jerome Baesel and Dwight Grant</td>
<td></td>
</tr>
<tr>
<td>82-201</td>
<td>&quot;A Market Index Futures Contract and Portfolio Selection,&quot; by Dwight Grant</td>
<td></td>
</tr>
<tr>
<td>82-202</td>
<td>&quot;Selecting Optimal Portfolios with a Futures Market in a Stock Index,&quot; by Dwight Grant</td>
<td></td>
</tr>
<tr>
<td>82-203</td>
<td>&quot;Market Index Futures Contracts: Some Thoughts on Delivery Dates,&quot; by Dwight Grant</td>
<td></td>
</tr>
<tr>
<td>82-204</td>
<td>&quot;Optimal Sequential Futures Trading,&quot; by Jerome Baesel and Dwight Grant</td>
<td></td>
</tr>
<tr>
<td>82-300</td>
<td>&quot;The Hypothesized Effects of Ability in the Turnover Process,&quot; by Ellen F. Jackofsky and Lawrence H. Peters</td>
<td></td>
</tr>
<tr>
<td>82-301</td>
<td>&quot;Teaching A Financial Planning Language As The Principal Computer Language for MBA's,&quot; by Thomas E. Perkins and Paul Gray</td>
<td></td>
</tr>
<tr>
<td>82-302</td>
<td>&quot;Put Budgeting Back Into Capital Budgeting,&quot; by Michael F. van Breda</td>
<td></td>
</tr>
<tr>
<td>82-400</td>
<td>&quot;Information Dissemination and Portfolio Choice,&quot; by Robert H. Jennings and Christopher B. Barry</td>
<td></td>
</tr>
<tr>
<td>82-401</td>
<td>&quot;Reality Shock: The Link Between Socialization and Organizational Commitment,&quot; by Roger A. Dean</td>
<td></td>
</tr>
<tr>
<td>82-402</td>
<td>&quot;Reporting on the Annual Report,&quot; by Gail E. Farrelly and Gail B. Wright</td>
<td></td>
</tr>
<tr>
<td>82-403</td>
<td>&quot;A Linguistic Analysis of Accounting,&quot; by Gail E. Farrelly</td>
<td></td>
</tr>
<tr>
<td>82-601</td>
<td>&quot;Optimal Land Use Planning,&quot; by Richard B. Peiser</td>
<td></td>
</tr>
<tr>
<td>82-602</td>
<td>&quot;Variance and Indices,&quot; by Michael F. van Breda</td>
<td></td>
</tr>
</tbody>
</table>
82-603 "The Pricing of Small Business Loans," by Jonathan A. Scott

82-604 "Collateral Requirements and Small Business Loans," by Jonathan A. Scott

82-605 "Validation Strategies For Multiple Regression Analysis: A Tutorial," by Marion G. Sobol

82-700 "Credit Rationing and the Small Business Community," by Jonathan A. Scott

82-701 "Bank Structure and Small Business Loan Markets," by William C. Dunkelberg and Jonathan A. Scott

82-800 "Transportation Evaluation in Community Design: An Extension with Equilibrium Route Assignment," by Richard B. Peiser

82-801 "An Expanded Commercial Paper Rating Scale: Classification of Industrial Issuers," by John W. Peavy, III and S. Michael Edgar

82-802 "Inflation, Risk, and Corporate Profitability: Effects on Common Stock Returns," by David A. Goodman and John W. Peavy, III

82-803 "Turnover and Job Performance: An Integrated Process Model," by Ellen F. Jackofsky


82-806 "Analytical Review Developments in Practice: Misconceptions, Potential Applications, and Field Experience," by Wanda Wallace

82-807 "Using Financial Planning Languages For Simulation," by Paul Gray

82-808 "A Look At How Managers' Minds Work," by John W. Slocum, Jr. and Don Hellriegel

82-900 "The Impact of Price Earnings Ratios on Portfolio Returns," by John W. Peavy, III and David A. Goodman

82-901 "Replicating Electric Utility Short-Term Credit Ratings," by John W. Peavy, III and S. Michael Edgar

82-902 "Job Turnover Versus Company Turnover: Reassessment of the March and Simon Participation Model," by Ellen F. Jackofsky and Lawrence H. Peters

82-903 "Investment Management By Multiple Managers: An Agency-Theoretic Explanation," by Christopher B. Barry and Laura T. Starks

82-904 "The Senior Marketing Officer - An Academic Perspective," by James T. Rothe
82-905 "The Impact of Cable Television on Subscriber and Nonsupscriber Behavior," by James T. Rothe, Michael G. Harvey, and George C. Michael

82-110 "Reasons for Quitting: A Comparison of Part-Time and Full-Time Employees," by James R. Salter, Lawrence H. Peters, and Ellen F. Jackofsky

82-111 "Integrating Financial Portfolio Analysis with Product Portfolio Models," by Vijay Mahajan and Jerry Wind

82-112 "A Non-Uniform Influence Innovation Diffusion Model of New Product Acceptance," by Christopher J. Easingwood, Vijay Mahajan, and Eitan Muller

82-113 "The Acceptability of Regression Analysis as Evidence in a Courtroom - Implications for the Auditor," by Wanda A. Wallace

82-114 "A Further Inquiry Into The Market Value And Earnings' Yield Anomalies," by John W. Peavy, III and David A. Goodman

82-120 "Compensating Balances, Deficiency Fees and Lines of Credit: An Operational Model," by Chun H. Lam and Kenneth J. Boudreaux

82-121 "Toward a Formal Model of Optimal Seller Behavior in the Real Estate Transactions Process," by Kerry Vandell


82-123 "Compensating Balances, Deficiency Fees and Lines of Credit," by Chun H. Lam and Kenneth J. Boudreaux

83-100 "Teaching Software System Design: An Experiential Approach," by Thomas E. Perkins


83-102 "An Interactive Approach to Pension Fund Asset Management," by David A. Goodman and John W. Peavy, III
