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ABSTRACT

Examination of the relevant literature indicates that most studies of school structure and interpersonal relations have either been too narrow in scope, too theoretical, or too tied to the individual as the unit of analysis to support any conclusive generalizations. A search of the literature for appropriate variables to include in a more complex analysis suggested the use of perceived organizational effectiveness, loyalty, and job satisfaction as dependent variables, and organizational structures and organizational processes as independent variables. Instruments measuring these variables were applied to 114 schools in 12 school districts, and the responses subjected to multiple regression analysis. Results indicated that more effective schools, as perceived by teachers, are characterized by more participative organizational processes, less centralized decision-making structures, more formalized general rules, and more complexity or high professional activity. The results also revealed that of three hypotheses based on a synthesis of the literature only one was borne out. This indicates a need for continued use of more sophisticated techniques to test the assumptions made as a result of earlier, less complex research. (Author/PD)

Demographic Characteristics, Faculty Attitudes and School Structure

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DEMOGRAPHIC CHARACTERISTICS, FACULTY ATTITUDES, AND SCHOOL STRUCTURE[a]

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The interest in school structures and interpersonal relations is apparent in the educational administration literature. Articles using bureaucratic or climate theory appear in most issues of the Educational Administration Quarterly and the Journal of Educational Administration. However, three deficiencies limit the generalizability of many conclusions reported in the literature. The first deficiency is that only a small portion of a theory is tested. In many studies of bureaucracy or climate, only a single dependent variable, such as teacher or administrator attitudes is examined.[1] Social systems theorists[2] have long maintained that school structures and processes interact to affect outcomes or participant behavior. Similarly, organizational theorists[3] have described outcomes in multidimensional terms. Combinations of concepts, such as productivity and satisfaction have been used. In educational administration studies, however, a single criterion has been more typical.

The second group of articles that might be identified as deficient are less constrained theoretically and focus on building grand models.[4] These articles provide conceptual discourses of schools as peopled bureaucracies, but they lack any empirical testing. In many instances, no guidelines are provided for assessing their theoretical efficacy. A third reason for articles with limited generalizability stems from the use of inappropriate units of analysis. Many published articles use the individual as the unit

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[a]A slightly revised version of this paper is being considered for publication.

of analysis in investigations of bureaucracy and climate.[5] Bureaucratic structure clearly relates to characteristics that would be more appropriately examined in terms of the school building or district. Likewise, organizational climate must be differentiated from psychological climate.[6] If school processes or school groups are being assayed, the unit of analysis should be the organization, not the individual.

These criticisms are not intended to diminish the contributions of the cited works but to observe general shortcomings that can be avoided. During the early development of educational administration, it was essential to employ relatively simple research designs and to construct conceptual models. Today, the early literature should serve as a foundation for more sophisticated inquiries. Based on this reasoning, the study described here employed the school as the unit of analysis in an investigation that combined structure and process variables to predict the multiple outcomes of perceived organizational effectiveness, loyalty to principals, and job satisfaction of faculties.

Theoretical Framework

Dependent Variables

Perceived organizational effectiveness, loyalty, and job satisfaction represent a variety of outcomes that have been widely used to approximate organizational performance. In 1975, Steers[7] found adaptability-flexibility, productivity, and job satisfaction to be frequently occurring concepts in organizational effectiveness models. The three dependent variables are also similar to Hage's[8] organizational ends of adaptiveness, production, efficiency, and job satisfaction. Thus, it can be argued that the three criterion variables constitute an acceptable composite of performance indicators.

Perceived organizational effectiveness is the subjective evaluation of a school's productivity, adaptability, and flexibility. Schools produce a variety of products and services in terms of instruction, learning, and extracurricular events. The relative quality, quantity, and efficiency of production are components of organizational effectiveness. Moreover, Mott[9] conceptualizes the adaptability or the ability to change routines into two types. Symbolic adaptation involves anticipating problems, developing timely solutions, as well as staying abreast of new educational processes and equipment. Behavioral adaptation is the prompt implementation of solutions and utilization of new processes and equipment. Flexibility is a special type of adaptive behavior that Mott categorizes separately. Flexibility is the ability to adjust quickly and to cope with temporarily unpredictable overloads of work through significant but temporary modification of roles. In other words, flexibility refers to handling emergency situations. In summary, effective schools are perceived to produce products and services in greater quantity, with better quality; to show flexibility; and to exhibit adaptability to a greater extent than less effective organizations. Mott formulated the Index of Organizational Effectiveness (IOE) to measure these three dimensions across a wide variety of organizational types.

Loyalty, as defined by Blau and Scott,[10] is a condition in which superiors are accepted, liked, and respected by subordinates. This affective-based definition was expanded by Murray and Corenblum[11] to include a cognitive component. The cognitive aspect involves holding a set of beliefs that embody an unquestioning faith and trust in the leader and are supplemented by a behavioral aspect of willingness to follow the superior. Hoy, Tartar, and Forsyth[12] note that subordinate loyalty to a

superior is a concept based on informal authority. In contrast to the limited contractual scope of formal authority, teacher loyalty to a principal broadens the authority relationship because of common values and shared sentiments. Conceptually, informal authority allows the administrator to stimulate higher teacher performance by encouraging greater effort, more acceptance of responsibility, and the exercise of ingenuity and initiative. Empirically, Hoy, Tartar, and Forsyth linked teacher loyalty to the principal's ability to stimulate work group productivity. Therefore, loyalty can be considered an important indicator of school effectiveness.

Job satisfaction was defined in 1935 by Hoppock[13] as any combination of psychological, physiological, and environmental circumstances that cause a person to say, "I am satisfied with my job." Similar statements continue to be used by researchers. For example, Locke[14] recently defined overall job satisfaction as "the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating one's values." Moreover, job satisfaction has changed from being a precursor of performance to a legitimate criterion in itself. Holdaway[15] concludes that job satisfaction is generally viewed as an organizational outcome, not as a determinant. Smith, Kendall, and Hulin[16] believe that improving job satisfaction is a humanitarian value and is a legitimate goal in itself. Therefore, job satisfaction has been used as a dependent variable in this investigation and has been defined as the overall affective orientation teachers have toward their work in schools.

Taken together, the three dependent variables form a subjective, multidimensional index of school effectiveness from the teachers' perspective. The integrative concept is consonant with a systems resource framework as described by Stewart[17] and Pennings and Goodman.[18] That is, effectiveness is the degree to which an organization, such as a school, can

preserve the integration among its parts by producing outcomes in exchange for resources and continued survival. The three criterion variables appear to be essential for the exchange between the teaching staff and the school system. The next step is to specify which internal components of schools act as independent variables to produce perceived levels of organizational effectiveness, loyalty, and job satisfaction. According to Stewart, and Pennings and Goodman, social systems theory strongly suggests the importance of bureaucratic structures and group processes.

The Independent Variables and Conceptual Rationale

Organizational structures are formal characteristics or enduring patterns of operation in a school. These components are designed to be relatively independent of particular individuals. That is, structures refer to the relationship among different roles that have been created to achieve educational goals. Hage's[19] axiomatic theory of organizations provides several useful concepts for investigating school structure. Centralization, formalization, complexity, and stratification represent four properties or means to accomplish organizational goals.

Using the concepts in Hage's theory as a guide, Bishop and George[20] developed the Structural Properties Questionnaire (SPQ) to measure a school's organizational characteristics. Centralization or hierarchy of authority refers to the power distribution within the school. On one hand, it details where teachers or administrators can affect authority in the organization. On the other hand, it describes the degree of involvement school employees exercise in deciding classroom and curriculum policy. Formalization or standardization determines how rules are used in the school and the amount of deviation that is permitted from the stated procedures. The major components of formalization are job codification, role

specifity, standardization, rule observation, and professional latitude. Complexity or specialization involves the number of areas of expertise, the length of training required for each area, and the required level of professional activity.

A large body of literature exists that describes the independent effects of school structure on variables similar to the criterion variables discussed here. The general conclusion is that when the structure of a school, is measured by an instrument like the SPQ, it will be negatively related to perceived organizational effectiveness, loyalty, and job satisfaction. Support for this contention follows.

In a review of the literature, Ratsoy[22] concluded that teacher satisfaction, on the average, is lower in schools where teachers perceive a high degree of bureaucracy. Similarly, student achievement is lower when teachers view their schools as emphasizing a hierarchy of authority. In describing the SPQ, Bishop and George[23] reported that teachers who are highly anxious and tense predominated in highly formalized and centralized schools. They concluded that these teachers were less likely to develop a teaching style that focused on the student. Moreover, schools with a weaker hierarchy of authority encouraged teachers with a proclivity toward innovation and implementation of new programs. Less evidence exists in the literature for a structure and loyalty relationship, but Hoy, Newland, and Blazovsky[24] found that in more centralized and formalized schools, teachers expressed less loyalty.

Organizational processes, in contrast to structures, refer to the more informal, interpersonal characteristics and actions that result when individuals interact in an organization. Likert[25] developed the conceptualization used to examine organizational processes. His model incorporates leadership behavior, motivational forces, and interaction-influence

patterns to map a continuum from exploitive and authoritative to participative.

If a school falls on the exploitive-authoritative end of the continuum, interpersonal relationships are characterized by mistrust and a lack of confidence or supportive behavior. Hostility pervades the school. At the opposite pole, the participative system is characterized by a close, warm atmosphere in which supportive leaders and highly motivated employees share the responsibility for high performance. The intermediate portions of the continuum, benevolent-authoritative and consultive, tend to resemble the extremes from which they deviate. The benevolent-authoritative system has most of the trappings of the exploitive-authoritative system, only to a lesser degree. A school described as consultive is well along the way toward developing the characteristics of the participative system. Likert[25] used this theoretical model to develop the Profile of a School (POS) questionnaire.

Also, a significant amount of research independently relates the openness or participativeness of organizational processes to effectiveness criteria. After a thorough review, Hellriegel and Slocum[27] concluded that several studies clearly indicate that organizational climate is related to job satisfaction in terms of interpersonal relations, group cohesiveness, and task involvement. Significant relationships also have been found for performance, but these findings lack universality. More exceptions were found for performance than for satisfaction. In the educational setting, Forsyth and Hoy[28] found that when opportunities to contact and consult professional colleagues were restricted, there was a direct relation to work alienation. Similarly, Garland and O'Reilly[29] discovered that positive group climate was related to school effectiveness or a productive

learning context for students. Hoy, Tartar, and Forsyth[30] demonstrated a positive relationship between open climate indicators and loyalty.

Likert[31] is unequivocal about the posited relationships. He states the more participative a situation, the greater the likelihood of superior performance. His conclusion was drawn after reviewing the research findings from POS questionnaires. Several studies supported the relationship that the more participative the processes the higher the job satisfaction. In addition, in terms of effectiveness, Likert indicates that two schools which were judged as excellent by a panel were also characterized by participative processes. High standardized test scores, less teacher absenteeism, and greater capacity to change are associated with participative processes. Less evidence exists for a relationship with teacher loyalty, however. Indirect support is provided by the findings that schools with more participative climates have teachers with less militant attitudes.

In summary, a strong case can be argued for the influence of perceived structure or processes on school performance criteria. When structures and processes are examined together, the findings are fewer and less definite. In brokerage firms, Pennings[32] found that autonomous, decentralized, and participative organizations had a higher morale and production. The findings of Grassie and Carss[33] are limited by a unit of analysis problem. Their results suggest that hierarchy of authority is negatively associated with job satisfaction while climate is positively associated. In a very recent study by Bridges and Hallinan,[34] no evidence was found that the effects of subunit size and work system interdependence were mediated by communication and group cohesion. Therefore, structure and climate may have independent effects on school outcomes.

Hypotheses

Given the evidence for separate effects and the lack of investigations using both structural and process variables to predict school effectiveness, three hypotheses have been derived for this study. Organizational structures, as measured by the SPQ, will be negative predictors, and organizational processes, as indicated by POS scores, will be positive predictors. The following dependent variables will be issued: One, perceived organizational effectiveness of schools; two, teacher loyalty; and three, teacher job satisfaction.

Methods

Instrumentation: Independent Variables

School structures. The Structural Properties Questionnaire (SPQ), Form 4, constituted the measure of school bureaucracy. The SPQ was developed by Bishop and George and refined by Murphy, Bishop, and George[35] to measure the means properties of Hage's axiomatic theory. The 45 items grouped into 12 factors essentially ask respondents to describe their school using the constructs of centralization with four factors, formalization with five factors, and complexity with three factors. The descriptive names of the subscales are given in Table 1.

The teachers answered each item with a four-category response scale. The categories for 41 of the items were: rarely, sometimes, often, and very frequently. Four levels of the hierarchy served as descriptors for the remaining four items. The categories were assigned values from one to four. The factor score coefficients reported by Murphy, Bishop, and George were employed with each item response to calculate weighted Z scores. The 45-item Z scores were summed to yield 12 factor scores for each respondent.

Teacher factor scores within an analysis unit were averaged to produce school scores. The item responses for four factors were reversed. Therefore, greater centralization, formalization, and complexity are indicated by higher positive values.

The validity of the SPQ is supported by several studies summarized by Bishop and George. They also reported alpha coefficients as estimates of reliability ranging from .54 to .84, with most being around .80. The revised scoring procedure precluded the calculation of reliability estimates with the present sample, but the early indicators support the reliability of the SPQ.

Organizational processes. The Profile of a School (POS), Form 3 for teachers, was employed to measure the less formal interpersonal behavior and other processes in the school. For the most part, the POS asks teachers to describe the actual human behavior that occurs in the school rather than personal attitudes of the respondents.

The teachers' form of the POS contains 65 statements. Each is followed by an eight-category response scale. An example set of category descriptors ranges from very little to very great. The categories are assigned values from one to eight with the higher numbers indicating more participative processes.

Typically, responses to the POS are processed by the test developers. While this scoring method has positive characteristics for survey feedback and diagnosis, problems for research arise, because the 65 items are combined to form 40 indicators in about 10 subgroupings. The multiplicity and diffuse nature of the scales lessen the utility of the POS for research purposes. Therefore, the data for the present investigation were processed factor analyzing the 542 responses into a smaller number of subscales. Likert[36] notes that factor scores are useful for this type of study.

Principal components and oblique R-factor analysis procedures were used to determine fundamental factor structure of the POS. The following criteria described by Rummel[37] were used for determining the number of factors: scree test, discontinuity of eigenvalues, interpretability, eigenvalue of one, and the structure suggested by Likert. No a priori preferences were made regarding the importance of these criteria. When a conflict among them occurred, a judgment was made as to which made the most overall sense. The result was a four-factor solution. A description of each follows.

1. Principal leadership (23 items). This factor describes the principal's behavior in terms of supportiveness, work facilitation, goal emphasis, and interaction facilitation. The focus is at the principal-teacher level of interaction.

2. Teacher leadership (22 items). This factor is similar to principal leadership, except the center of attention is teacher-student relationships. Basically, the teachers are describing their own behavior in terms of supportiveness, work facilitation, goal emphasis, and interaction facilitation.

3. Staff climate (12 items). This factor taps areas such as perceived influence of different staff levels (teachers, principals, and central office administrators), interaction among teachers, and which groups hold high performance goals.

4. Student climate (8 items). The questions measure perceived student influence, use of student ideas, and student involvement.

The item scores ranging from one to eight were summed to produce individual factor scores. The individual factor scores were averaged to generate the school scores. The validity is well established by developmental work reported by Likert. As estimates of reliability, the alpha

coefficients for this sample are .96, .93, .87, and .83 for factors one to four, respectively.

Demographic variables. To control for potential indigenous situational effects, five demographic variables were included. Size of the school was measured by the number of full-time equivalent teachers in the school. Experience levels of the teachers and principals were categorized as follows: under one year, one to five years, and over five years. Experience levels were assigned scale values of one, two, and three respectively. The type of school was public or private with the scale values being one and two. Finally, the levels variable was elementary and secondary with the scale values being one and two.

Instrumentation: Dependent Variables

Perceived organizational effectiveness. Mott's[38] Index of Effectiveness (IOE), adapted to the school situation, was employed to measure this construct. The original eight items were modified by replacing those words pertaining to an industrial situation with words indicating an educational setting. For example, "school" was substituted for "division." The IOE is normative (it attempts to specify those things an organization must do to become effective) and generalizable to all organizations. Mott provided extensive indicators to validity. The alpha coefficient as an estimate of reliability for this sample was .89.

Loyalty. The eight-item measure developed by Hoy and his associates[39] was used to measure teacher loyalty. Three dimensions of subordinate loyalty are tapped: (a) behavioral, or the willingness to remain or follow one's superior; (b) cognitive, or holding a set of beliefs that embody a faith and trust in the leader; and (c) affective or liking, accepting, and respecting the superior. A five-point Likert-type response set is provided. Construct validity has been supported, and reliability has been

high with alphas in the .90 range. An alpha of .91 was calculated for this study.

Job satisfaction. A six-item instrument was used to assess the teachers' overall affective orientation toward the job. The measure is indirect and asks teachers to indicate their feelings toward various job situations. The subjects respond by selecting from a five-category Likert-type scale ranging from one to five, with a higher score indicating greater job satisfaction. The instrument has high-face validity and an alpha coefficient of .71 as an estimate of reliability.

Sampling and Data Collection Procedures

The population included schools in one parochial and eleven public school districts. In the two largest districts, 14 of 45 and 18 of 64 schools were randomly selected. The 93 schools in the eight smaller districts were included for a total of 125. Since eleven faculties opted not to participate, 114 (91%) schools comprised the final sample.

Within each school, 12 to 18 teachers were randomly chosen to complete one of the three instruments. Of the 1733 selected, 1619 (93%) voluntarily participated. To ensure against a response set across the different measures and, therefore, to maintain methodological independence among the measures, the subjects within each school were randomly divided into three groups. One-third responded the SPQ, one-third to the POS, and one-third to criterion instrument. The returns for each were 533, 532, and 544, respectively.

Since the school was the unit of analysis and not the individual, data were aggregated by averaging the teacher responses within each school. The result was school scores for the 19 subscales on the SPQ, POS, job satisfaction, loyalty, and perceived organizational effectiveness measures, and the five demographic variables.

In most instances, a research team member attended a faculty meeting to describe the study and to gather the data. In a few cases, this procedure was not allowed, and a designated faculty member distributed and collected the instruments to and from selected teachers.

Results

A multiple stepwise regression analysis procedure was used to test the hypotheses.[40] The findings from the descriptive statistics and the correlation coefficients will be discussed first with the hypothesis testing following.

Means and Standard Deviations

The 21 independent variables from the POS, SPQ, demographic measures, and the three dependent variables with their means and standard deviations constitute Table 1. The four means for the organizational processes are the result of summing the 23, 22, 12, and 8 items comprising the POS factors. To place the sample on Likert's continuum, the summed values must be divided by the number of items in each. The resulting values are 6.01 for principal leadership, 6.13 for teacher leadership, 5.32 for staff climate, and 4.61 for student climate. Since the conceptual mean of the continuum is 4.50, all the subscales leaned toward the participative end of the continuum. With the exception of the student climate factor, the schools are described by the teachers as being highly consultive with the two leadership factors approaching the participative.

TABLE 1 about here

The 12 SPQ mean scores describing the schools' structures are evenly divided between tendencies toward high and low bureaucratization. More-

over, within each structural concept of centralization, formalization and complexity, differences exist in the direction of either more or less bureaucracy. This finding suggests that schools are perceived by teachers as having complicated and perhaps contradictory configurations.

The school size averaged about 23 full-time teachers; most of them were public. They were evenly divided between the elementary and secondary levels. The length of experience for the principa' tended toward five years or more (mean = 2.60), while the teachers were less experienced (mean = 2.19). Most of the teachers had from one to five years of experience.

The three means for the criterion variables are the result of summing the eight, eight, and six items forming the scales. The conceptual mean for the scales is 3.00. The empirical means are 3.83 for perceived organizational effectiveness, 3.81 for loyalty, and 3.65 for job satisfaction. The teachers described their schools as having positive effectiveness characteristics.

Correlation Coefficients

The correlation matrix for the 24 variables constitutes Table 2. The four POS factors (variables 1-4) describing the organizational processes are highly intercorrelated. In particular, the .71 correlation between principal leadership and staff climate indicates a close relationship between an administrator's style and the faculty's sense of well-being. With one exception, all of the process variables are related to the effectiveness criteria. The more participative the processes the higher the perceived effectiveness.

TABLE 2 about here

With the exception of the centralization subscales of the SPQ (variables 5-8), the organizational structure variables show fewer statistically significant relationships among themselves. Five of the six correlation coefficients describing centralization are significantly different from zero. The centralization indicators consistently show negative correlations with both the informal processes of the POS and the criterion variables. When teachers perceive high centralization, they associate it with exploitive-authoritative processes and less effective schools.

The reverse holds for a standardization-formalization and a complexity factor. General rules for teachers (variable 9) and professional activities (variable 15) are positively correlated with both the process and criterion indicators. When teachers perceive a situation as one in which there are specified general rules and high levels of professional activity, they associate it with participative processes and more effective schools.

The correlation coefficients among the dependent variables (22-24) also represent interesting, if not unexpected, findings. Since these measures required perceptual responses from the teachers and were completed at the same time, some response set is to be expected. However, this methodological artifact would not produce such high correlation coefficients. Therefore, perceived school effectiveness, loyalty to principal, and teacher job satisfaction are positively related to each other.

Hypothesis Testing

Multiple stepwise regression analysis was used to test the hypotheses. In contrast to the preceding zero-order correlational analysis, multiple regression is a method of analyzing the collective and separate contributions of the independent variables to the variation to the dependent variable.[41]

Hypothesis one. The results of the statistical testing of the first hypothesis comprise Table 3. The prediction was partially supported that the SPQ and POS subscales would be negative and positive predictors, respectively, of perceived organizational effectiveness. The regression equation is significant ($F = 23.3$, $df = 3,110$, $p < .01$), and the explained variance is relatively high at 39%.

The number of predictors, however, is only three, with two of them being opposite the hypothesized direction. The best independent prediction was suggested earlier by the correlational analysis. Teachers describe the school as being organizationally effective when the general rules for teachers are specified (beta = .43), that is, situations in which more standardization exists. Professional activities also made an independent positive contribution in explaining the variation in perceived organizational effectiveness (beta = .18). These findings are opposite to the hypothesis. Supporting the hypothesis is the prediction by staff climate (beta = .19). Therefore, formalization, complexity, and participative climates are positive predictors of perceived organizational effectiveness and the hypothesis must be revised to reflect this finding.

TABLE 3 about here

Hypothesis two. The posited prediction that teacher loyalty to the principal is affected by the structure and process variables was also partially supported. Summaries for this testing constitute Table 4. The first regression equation contained a classical statistical problem; that is, the teacher leadership variable was acting as a suppressor. Conger[42] identifies this condition as one in which a predictor has a regression

weight that is opposite in sign to what is expected. The teacher leadership variable has a nonsignificant but positive correlation coefficient (.13) and a negative beta weight (-.24). To avoid this problem, the analysis was completed again without the teacher leadership subscale.

TABLE 4 about here

The results from the second regression procedure are summarized in the lower half of Table 4. The overall equation forms a significant set of predictors (F = 30.7, df = 4,109, $p < .01$). In addition, 52% represents a high level of explained variance. Three variables in the equation relate to the principals' activities and characteristics. This is a logical finding, since the criterion is loyalty to the principal. Again a POS process subscale (principal leadership, beta = .39) and a SPQ factor (general rules for teachers, beta = .35) are the best predictors.

Principal experience represents an interesting finding. The zero-order correlation of .16 is not significant, while the beta weight of .19 is. The experience variable assumes some of the characteristics of a suppressor. After examining the correlation matrix in Table 2, however, this conclusion is not warranted. The variable is hardly correlated with the other independent variables and probably entered the equation because it makes a unique contribution to the explained variance in teacher loyalty to the principal.

Like hypothesis one, hypothesis two must be revised to reflect these findings. Teacher loyalty to the principal is best predicted by formalized general rules, participative processes by the administrative leadership, and more experienced principals in parochial schools.

Hypothesis three. The proposition that participative processes and less structure lead to higher job satisfaction is partially supported by the analysis summary in Table 5. The equation is statistically significant ($F = 15.6$, $df = 4,109$, $p < .01$), and 36% of the variance in the job satisfaction variable was explained.

TABLE 5 about here

The beta weights for four variables indicate the significant predictors of job satisfaction. Two structural variables from the SPQ having opposite signs form part of the equation. High formalization on the general rules for teachers (beta = .27) and low centralization on the decision making for instruction and curriculum (beta = -.17) are related to teacher satisfaction with work. Similarly, participative principal leadership (beta = .29) and schools with more experienced principals (beta = .25) are associated with positive satisfaction. Consequently, hypothesis three must be altered to reflect the positive effects of formalization on teacher job satisfaction.

Summary and Discussion

Several potentially important relationships were found, not all conforming to the hypotheses. The overall equation statistics for the stepwise regression procedures provided substantial support for the three hypotheses. All were significantly different from zero beyond the 1% level and the magnitudes of the explained variance were important, ranging from 36% to 52%. However, the individual variable statistics provided mixed support for the posited relationships. Even though the explained variances were relatively high, only 3 or 4 of the 21 independent variables entered

into any of the prediction equations. Across the three hypotheses, only 8 of a possible 48 beta weights were significant at or beyond the 5% level.

Support for the hypotheses includes the positive predictions by the organizational process variables. In each regression analysis, a POS subscale was a positive predictor of perceived organizational effectiveness, loyalty, or job satisfaction. Principal leadership was the predictor in two of the three cases. Less support for the hypotheses includes the findings for the organizational structure variables. The centralization subscales of the SPQ, as hypothesized, tended to be negatively correlated with the dependent variables but failed to enter the regression equation. The formalization-standardization indicator of general rules for teachers was a consistent predictor for all of the dependent variables, but the directions were positive, which is contrary to the hypotheses. The complexity subscales of the SPQ also tended to have positive correlations with the effectiveness criteria. The hypotheses, therefore, must be reformulated to account for the differentiated effects of school structure.

More specifically, the findings reinforce those of Hoy, Newland, and Blazovsky[43] that centralization reduces morale but that increased formalization improves teachers' attitudes toward their jobs. Likert's[44] position was confirmed that participative processes are associated with perceived effectiveness criteria. The accepted premise that perceived structures of schools are negatively associated with performance indicators was not found to be true. Moreover, the conclusions of Pennings,[45] Grassie and Carss,[46] and Bridges and Hallinan[47] were substantiated that structures and processes have independent impacts on effectiveness criteria. In the three regression analyses, combined effects were indicated by both process and structure variables entering the prediction equations. Social systems theory has contained this postulate since its inception.

Synthesizing this discussion yields the following generalization: More effective schools, as perceived by teachers, are characterized by (a) more participative organizational processes, (b) less centralized decision-making structures, (c) more formalized general rules, and (d) more complexity or high professional activity. This reformulated hypothesis supports the emergent view that environmental variables such as bureaucratic structures and informal processes exhibit more complex and variegated effects than their treatments suggest in the recent educational administration literature.[48]

Conclusions

The purpose of this study was to build on the existing literature dealing with school configurations and interpersonal processes while avoiding several deficiencies limiting its generalizability. In many ways, this objective was achieved. The literature was synthesized with a multidimensional effectiveness criterion; hypotheses were drawn; a relatively large sample of school units were selected; reliable measures were used; and sophisticated analysis procedures were employed. Yet, as the investigation proceeded, other unsettling shortcomings became apparent. The traditional theoretical formulations represented here may not be complex enough to explain the wide variations of behavior in educational organizations. Alternative theoretical views should be considered to select and to display the subtle relationships among structural, process, and effectiveness variables. Weick's[49] view of schools as loosely coupled systems shows potential for expanding our understandings of these interrelationships.

A second shortcoming that was observed reflects the narrowness of methodologies. This investigation represents survey techniques with perceptual measures. Researchers in educational administration also need to

expand the types of methodologies that are used. Ethnography, and experimental and longitudinal procedures should be considered for investigations of school organizations. In addition, more objective and less perceptual measures should be used to complement the perceptual indicators. Friesen[50] recently collected the research investigations of schools that have employed the more objective Aston measures of organizational characteristics. Such instruments should be used with greater frequency in our research.

This study has made a contribution to our understanding of schools as social organizations. Combined with the emergence of alternative views of organizations and new measures, positive and significant new understandings are within reach. It may be premature to predict a renewed theory and research moveme in educational administration, but the "stream of new research findings and theoretical synthesis, are signs of vitality."[51]

NOTES

1. See, for example, Cecil Miskel and Ed Gerhardt, "Perceived Bureaucracy, Teacher Conflict, Central Life Interests, Voluntarism, and Job Satisfaction," Journal of Educational Administration 10 (1974): 84-97; James B. Appleberry and Wayne K. Hoy, "The Pupil Control Ideology of Professional Personnel in 'Open' and 'Closed' Elementary Schools," Educational Administration Quarterly 5 (1969): 74-85; and Barry Anderson and Ronald M. Tessier, "Social Class, School Bureaucratization and Educational Aspirations," Educational Administration Quarterly 9 (1973): 34-49.

2. Early and recent statements of this position include Jacob W. Getzels and Egon G. Guba, "Social Behavior and the Administrative Process", School Review 65 (1957): 423-441; and Lawrence R. James and Allan P. Jones, "Organizational Climate: A Review of Theory and Research," Psychological Bulletin 81 (1974): 1096-1112.

3. An excellent review and synthesis of organizational effectiveness is provided in Richard M. Steers, "Problems in the Measurement of Organizational Effectiveness," Administrative Science Quarterly 20 (1975): 546-558.

4. See, for instance, John Andes, "Alternative Models for Urban District Organization," Educational Administration Quarterly 7 (1971): 64-86; and E. Mark Hanson, "The Modern Educational Bureaucracy and the Process of Change," Educational Administration Quarterly 11 (1975): 21-36.

5. Examples include Theophilus O. Odetola, Edsel L. Erickson, Clifford E. Bryan, and Lewis Walker, "Organizational Structure and Student Alienation," Educational Administration Quarterly 8 (1972): 15-26; and John

Nirenberg, "A Comparison of the Management Systems of Traditional and Alternative Public High Schools," Educational Administration Quarterly 13 (1977): 86-104.

6. James and Jones, "Organizational Climate."
7. Steers, "Problems in Measurement."
8. Jerald Hage, "An Axiomatic Theory of Organizations," Administrative Science Quarterly 10 (1965): 289-320.
9. Paul E. Mott, The Characteristics of Effective Organizations (New York: Harper and Row, 1972).
10. Peter M. Blau and W. Richard Scott, Formal Organization (New York: Chandler, 1962).
11. V. V. Murray and Allan F. Corenblum, "Loyalty to Immediate Superiors at Alternate Hierarchical Levels in a Bureaucracy," American Journal of Sociology 62 (1966): 77-85.
12. Wayne K. Hoy, C.J. Tartar, and Patrick Forsyth, "Administrative Behavior and Subordinate Loyalty: An Empirical Assessment," Journal of Educational Administration 16 (1978): 29-38.
13. Robert Hoppock, Job Satisfaction (New York: Harper, 1935).
14. E. A. Locke, "What Is Job Satisfaction?", Organizational Behavior and Human Performance 4 (1969): 309-336.
15. Edward A. Holdaway, Teacher Satisfaction: An Alberta Report (Edmonton: The University of Alberta, 1978).
16. Patricia C. Smith, Lorne M. Kendall, and Charles L. Hulin, The Measurement of Satisfaction in Work and Retirement (Chicago: Rand McNally, 1969).
17. James H. Stewart, "Factors Accounting for Goal Effectiveness: A Longitudinal Study," ed. S. Lee Spray, Organizational Effectiveness: Theory, Research, Utilization (Kent, Ohio: Kent State University, 1976).

18. Johannes M. Pennings and Paul S. Goodman, "A Framework of Organizational Effectiveness," paper presented at the 84th Annual Convention of the American Psychological Association, Washington, D.C., 1976 (Bethesda, Md.: ERIC Document Reproduction Service, Ed132672, 1977).

19. Hage, "An Axiomatic Theory of Organizations."

20. Lloyd K. Bishop and Julius R. George, "Organizational Structures: Factor Analysis of Structural Characteristics of Public Elementary and Secondary Schools," Educational Administration Quarterly 9 (1973): 66-80.

21. Hage, "An Axiomatic Theory of Organizations."

22. Eugene W. Ratsoy, "Participative and Hierarchical Management of Schools," Journal of Educational Administration 11 (1973): 161-170.

23. Bishop and George, "Organizational Structures."

24. Wayne K. Hoy, Wayne Newland, and Richard Blazovsky, "Subordinate Loyalty to Superior Esprit, and Aspects of Bureaucratic Structure," Educational Administration Quarterly 13 (1977): 71-85.

25. Rensis Likert, The Human Organization: Its Management and Value (New York: McGraw-Hill, 1967).

26. Renis Likert, The Likert Profile of a School, 2nd ed. (Ann Arbor, Mich.: Rensis Likert Associates, 1978).

27. Don Hellriegel and John W. Slocum, "Organizational Climate: Measures, Research and Contingencies," Academy of Management Journal 17 (1974): 255-280.

28. Patrick B. Forsyth and Wayne K. Hoy, "Isolation and Alientation in Educational Organization," Educational Administration Quarterly 14 (1978): 80-96.

29. Parnell Garland and Robert R. O'Reilly, "The Effect of Leader-Member Interaction on Organizational Effectiveness," Educational Administration Quarterly 12 (1976): 9-30.

30. Hoy, Tartar, and Forsyth, "Administrative Behavior."

31. Likert, The Likert Profile of a School.

32. Johannes M. Pennings, "Dimensions of Organizational Influence and Their Effectiveness Correlates," Administrative Science Quarterly 21 (1976): 688-699.

33. McCrae C. Grassie and Brian W. Carss, "School Structure, Leadership Quality and Teacher Satisfaction," Educational Administration Quarterly 9 (1973): 15-26.

34. Edwin M. Bridges and Maureen T. Hallinan, "Subunit Size, Work System Interdependence, and Employee Absenteeism," Educational Administration Quarterly 14 (1978): 21-42.

35. Bishop and George, "Organizational Structures"; and Michael Murphy, Lloyd K. Bishop, and Julius R. George, "Defining Organizational Properties of Schools: A Focus on Structure," Paper presented at the Annual Meeting, AERA, Washington, D.C., 1975.

36. Likert, "The Likert Profile of a School."

37. R. J. Rummel, Applied Factor Analysis (Evanston, Ill.: Northwestern University Press, 1970).

38. Mott, The Characteristics.

39. See, for example, Hoy, Tartar, and Forsyth, "Administrative Behavior."

40. N. H. Nie, C. H. Jenkins, J. G. Steinbrenner, and D. H. Bent, SPSS: Statistical Package for the Social Sciences, 2nd ed. (New York: McGraw-Hill, 1975).

41. Fred N. Kerlinger and Elazar J. Pedhazur, Multiple Regression in Behavioral Research (Holt, Rinehart and Winston, 1973).

42. Anthony J. Conger, "A Revised Definition for Suppressor Variables: A Guide to Their Identification and Interpretation," Educational and Psychological Measurement 34 (1974): 35-46.

43. Hoy, Newland, and Blazovsky, "Subordinate Loyalty."

44. Likert, The Likert Profile of a School.

45. Pennings, "Dimensions of Organizational Influence."

46. Grassie and Carss, "School Structure."

47. Bridges and Hallinan, "Subunit Size."

48. Marshall W. Meyer, "Introduction: Recent Developments in Organizational Research and Theory," ed. Marshall W. Meyer, Environments and Organizations (San Francisco: Jossey-Bass, 1978).

49. K. E. Weick, "Educational Organizations as Loosely Coupled Systems," Administrative Science Quarterly, 21 (1976): 1-19.

50. David Friesen, Aston Studies in Education (Edmonton: The University of Alberta, 1978).

51. Meyer, "Introduction," p. 1.

TABLE 1

Means and Standard Deviations for All of the Variables (N=114)

Independent and Dependent Variables	Means	Standard Deviations
ORGANIZATIONAL PROCESSES		
1. Principal Leadership	138.32	17.51
2. Teacher Leadership	134.78	10.35
3. Staff Climate	63.83	8.08
4. Student Climate	36.92	4.85
ORGANIZATIONAL STRUCTURES		
Centralization		
Decision Making		
5. Classroom Teaching	0.25	0.60
6. Instruction and Curriculum	0.35	0.51
Hierarchy of Authority		
7. Decision Making w/Hierarchy	0.09	0.63
8. Supervision w/Hierarchy	-0.33	0.50
Formalization		
Standardization		
9. General Rules for Teachers	0.45	0.60
10. Rules for Teacher Lesson Plans	0.28	0.82
11. Rules for Teacher Centers of Study	-0.10	0.45
Professional Latitude		
12. General[a]	-0.20	0.34
13. Provided by Principal[a]	-0.25	0.64
Complexity		
14. Specialization of Teaching Assignment[a]	0.27	0.49
15. Professional Activities[a]	-0.25	0.48
16. Professional Training	-0.12	0.58
DEMOGRAPHIC CHARACTERISTICS		
17. Size, Number of Teachers	23.17	20.00
18. Type School, Public or Private	1.21	0.41
19. Level School, Elementary or Secondary	1.46	0.73
20. Principal Experience	2.60	1.17
21. Teacher Experience	2.19	0.33
CRITERION VARIABLES		
22. Perceived Organizational Effectiveness	30.61	3.56
23. Loyalty	30.53	5.10
24. Job Satisfaction	21.92	2.61

[a]Responses were reversed.

TABLE 2

Correlation Matrix for All Variables in the Study

Variables[a]	1[b]	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-																							
2	52*	-																						
3	71*	44*	-																					
4	40*	35*	52*	-																				
5	11	17	03	01	-																			
6	-13	-14	-28*	-14	-12	-																		
7	-41*	-29*	-37*	-18*	-25*	19*	-																	
8	-32*	-12	-30*	-10	-22*	19*	37*	-																
9	55*	23*	42*	11	-01	-27*	-39*	-27*	-															
10	02	08	04	15	09	01	-05	04	15	-														
11	10	28*	11	-01	15	-10	-15	-08	13	09	-													
12	03	-07	-13	-06	-06	00	-15	-22*	14	-08	-25*	-												
13	-10	-09	-12	-08	-09	21*	08	05	11	21*	00	03	-											
14	-17	-23*	-03	-03	-12	-04	32*	22*	-17	-24*	-24*	18*	04	-										
15	31*	18*	23*	12	-20*	19*	-11	-17	29*	12	19*	-03	-10	-33*	-									
16	26*	09	22*	18*	26*	-12	-38*	-34*	05	-09	-10	25*	-25*	00	12	-								
17	-25*	-16	-14	-02	-33*	11	06	16	-06	32*	09	-13	27*	-29*	-07	-22*	-							
18	23*	05	61*	26*	10	-31*	-25*	-38*	13	06	07	-12	-13	07	24*	28*	-13	-						
19	-44*	-46*	-22*	01	-41*	17	29*	22*	-25*	14	-15	-05	28*	13	-21*	-20*	60*	-03	-					
20	04	07	-03	-03	04	13	-03	09	-02	00	10	01	05	-17	-16	-05	00	-21*	03	-				
21	01	-03	-16	-04	-09	18*	04	10	09	11	13	-07	18*	-32*	-03	-21*	40*	-31*	17	34*	-			
22	41*	20*	41*	18*	02	-23*	-35*	-22*	57*	16	13	02	-11	-22*	35*	09	00	25*	-28*	01	-02	-		
23	63*	13	50*	20*	01	-22*	-43*	-27*	58*	-01	15	09	-06	-13	28*	22*	-06	28*	-16	16	02	61*	-	
24	47*	31*	32*	22*	06	-25*	-33*	-28*	47*	02	08	18*	-12	-08	20*	17	-15	17	-32*	23*	-04	54*	58*	-

*$p < .05$, df = 112.

[a]Variable names are provided in Table 1.

[b]Coefficients are multiplied by 100.

TABLE 3

Multiple Stepwise Regression Analysis Summary for Testing Hypothesis One with Perceived Organizational Effectiveness Being the Dependent Variable

Independent Variables (Number and Name from Table 1)	r	beta	F	df	R^2
9. General Rules for Teachers	.57**	.43	26.5**	1,113	.32
3. Staff Climate	.41**	.19	5.4*	1,112	.36
15. Professional Activities	.35**	.18	5.3*	1,111	.39
Equation			23.3**	3,110	.39

*p<.05
**p<.01

TABLE 4

Multiple Stepwise Regression Analysis Summaries for Testing Hypothesis Two with Loyalty Being the Dependent Variable

Independent Variables (Number and Name from Table 1)	r	beta	F	df	R^2
First Analysis with Suppressor Included					
1. Principal Leadership	.63**	.52	35.2**	1,113	.40
9. General Rules for Teachers	.58**	.33	19.0**	1,112	.48
2. Teacher Leadership	.13	-.24	10.3**	1,111	.52
20. Principal Experience	.16	.20	9.1**	1,110	.55
18. Type of School	.28**	.17	6.3*	1,109	.57
Equation			28.7**	5,108	.57
Second Analysis with Suppressor Removed					
1. Principal Leadership	.63**	.39	23.1**	1,113	.40
9. General Rules for Teachers	.58**	.35	19.5**	1,112	.48
20. Principal Experience	.16	.19	7.8**	1,111	.50
18. Type of School	.28**	.18	6.9**	1,110	.52
Equation			30.7**	4,109	.52

*p<.05
**p<.01

TABLE 5

Multiple Stepwise Regression Analysis Summary for Testing Hypothesis Three with Job Satisfaction Being the Dependent Variable

Independent Variables (Number and Name from Table 1)	r	beta	F	df	R^2
9. General Rules for Teachers	.47**	.27	8.0**	1,113	.22
1. Principal Leadership	.47**	.29	9.6**	1,112	.28
20. Principal Experience	.23**	.25	10.4**	1,111	.33
6. Decision Making I and C	-.25**	-.17	4.4*	1,110	.36
Equation			15.3**	4,109	.36

*p<.05
**p<.01