

Chapter 3: Research Design and Methodology

Introduction

Chapter 2 examined the prior research on the context of the modern superintendency and the literature that supports the variables used in the survey, focusing on superintendent evaluation.

Changing times have resulted in stresses upon the board and superintendent relationship often mirrored in the superintendent evaluation process (National School Board Association [NSBA], 2000; Lashway, 2002b). This research was an opportunity to get beyond identification of superintendent evaluation methods, frequency, and criteria that characterized the last 20 years of research. The literature on the rapidly changing climate of school leadership suggested that gathering data on the dynamics of the relationship between the board and the superintendent was long overdue. The goal was to analyze the relative effects of those factors on the relationship, using the data to suggest strategies for substantive and manageable improvement.

The researcher gathered data from school board presidents and superintendents in Michigan's public school districts. A comprehensive survey (153 variables, 55 questions) was developed

and administered online for a period of six weeks in the spring of 2004. This chapter discusses the methodology used to collect these data and the methodology used to create the *Strength of Relationship Scale*. First, research hypotheses and research questions will be stated, followed by an explanation of the research design for the study's online survey. Construction of the survey instrument and tests for internal validity will be outlined. The variables in the study and procedures used for the collection of data will be reported. A detailed report on the construction of certain new variables from the raw data will be presented. Finally, analysis objectives and measures in relation to the hypotheses will be explained.

Research Hypotheses and Questions

Hypotheses

Prior research suggested three hypotheses that guided this research.

Hypothesis 1: Evaluation Method. Method of evaluation of the superintendent is a significant indicator (either positive or negative depending on the type of evaluation) of the strength of relationship between the school board and the superintendent.

Hypothesis 2: Conflict Levels. Low levels of conflict between the board and the superintendent correlate with Data-driven evaluation type and Pluralistic political climate type.

Hypothesis 3: Agreement, Overall Strength of Relationship (OSOR), and MEAP. High levels of agreement and higher Overall Strength of Relationship between the board and the superintendent correlate with higher district student achievement (MEAP passing rate).

Research Questions

The researcher employed the following research questions, gleaned from prior research, to pursue the hypotheses:

1. What methods of superintendent evaluation are used in the 526 public school districts in Michigan?
2. What are the political characteristics of the school district communities?
3. What are the demographic characteristics of the districts?
4. What influences the choice of method of superintendent evaluation?
5. What characteristics of board/superintendent relationship do the public school districts in Michigan exhibit?

6. To what degree do the variables in the survey influence the school board and superintendent relationship?

Research Design

This study was designed as quantitative research employing descriptive correlational analyses. “The major purpose of correlational research is to clarify our understanding of important phenomena through the identification of relationships between variables” (Fraenkel & Wallen, 2000, p. 360). The goal of this research was to explain the relationship between the school board and the superintendent in terms of their behaviors and the likely outcomes of those behaviors.

Prior research, as discussed in the review of relevant literature, as well as numerous anecdotal reports were examined in order to accomplish three goals:

1. To design a relevant research questionnaire
2. To rank responses in a *Strength of Relationship Scale*
3. To construct meaningful analyses

This study employed a self-administered Internet survey designed to gather detailed data about influences on the strength of the relationship between school boards and superintendents in public

school districts in Michigan and to determine to what degree those influences affect the board and superintendent relationship. The emphasis was on superintendent evaluation. The design employed quantitative data-gathering methods and used descriptive and explanatory analysis of the data to suggest correlational relationships.

One hundred fifty-three variables were probed in seven areas of influence on the board and superintendent relationship: evaluation type, conflict level, political climate, board training, teaching and learning, and general influence of the superintendent. In addition, demographic factors were considered. The areas of inquiry included

1. Evaluation of the superintendent

- a. What superintendent evaluation method is currently in use in each of Michigan's 526 public school districts? (Candoli et al., 1997).
- b. Are district goals written? By whom? How frequently?
- c. What is the level of satisfaction with the evaluation method, and what is the preference if not satisfied?

2. Conflict between board and superintendent

- a. What are the perceived results of the evaluation process?

- b. Are board members prepared to evaluate the superintendent, and is there a level of discomfort with that responsibility?
- c. Does evaluation promote communication? How strong is the communication between the board and the superintendent?
- d. Do board members recognize the distinct roles of a board trustee and a superintendent?
- e. Is the business of the district moving ahead and accomplishing its goals?
- f. What is the leadership style of the superintendent?
- g. What is the educational philosophy of the district?
- h. What is the perceived level of conflict between the board and the superintendent? What are the topics of conflict? Is this disruptive to the district?

3. Political climate of the district

- a. What is the political power structure of the community? (McCarty & Ramsey, 1971)?
- b. Who sets the board agenda? Are items not on the agenda introduced during public meetings?

- c. How large is the board? Is that too large?
 - d. How are the integrity of the superintendent and board members perceived?
 - e. How are government mandates handled in the district?
Are financial issues a strong pressure?
 - f. What are tenures of the board members and the superintendent?
4. Training level of board members and the superintendent
- a. What is the level of education of the board members and the superintendent?
 - b. Do they belong to their professional organizations? What is the pattern of their participation?
 - c. Do board members receive training? In what formats?
 - d. What is the most important job of the board? What is the most important job of the superintendent?
5. Teaching and learning in the district's classrooms
- a. Are board members aware of predominating teaching styles in the district?
 - b. What teaching style dominates?

- c. Do board members believe that all students can learn? If so, in what teaching/learning format?
 - d. Do government mandates effect teaching/learning in the district?
6. General relationship of the board and superintendent
- a. What is the perceived relationship between the board and the superintendent? (Marcus et al., 2003)
 - b. How does the superintendent influence the district? (Robinson & Bickers, 1990)
7. Demographic data of the district
- a. What are the demographic characteristics of the community? (Standard & Poor's, 2003)
 - i. Age, gender, ethnicity of respondents
 - ii. Socioeconomic status of the district as characterized by free and reduced-priced lunch status
 - iii. Student achievement as indicated by MEAP scores
 - iv. Size of the district by headcount and rural, suburban, or urban designation (Glass et al., 2000)
 - v. Per-pupil expenditure

The Survey Instrument and Validity Tests

Instrumentation

A search of the *ERIC Clearinghouse on Assessment and Evaluation* (<http://www.ericae.net>) revealed no existing instrument that addressed the area of inquiry of this study. Consequently, the researcher developed a survey instrument designed specifically for public school board presidents and superintendents. See Appendix A: Superintendent and School Board Strength of Relationship Survey and Scale: K-12 Public Schools in the U.S. (Duvall, 2004) for the survey document. The design was completed with professional assistance from an instructor at the University of Michigan Institute for Social Research who specialized in Internet surveys.

Reliability

Reliability was established by offline completion of the survey instrument, with written commentary, by six former Michigan public school district superintendents and six former school board members representing rural, suburban, and urban experiences (two in each category). Inter-item reliability was established by the comparison of responses to similar items within the questionnaire. Each group of questions consisted of at least two corroborating questions for each

area of inquiry. Each group of questions maintained criterion validity, as questions were directly based on criteria set by previous research and publications of standards by national professional organizations. Necessary adjustments to the questionnaire were made accordingly, and the questionnaire was finalized.

Threats to Internal Validity

There are four main threats to internal validity in survey research: mortality, location, instrumentation, and instrument decay (Fraenkel & Wallen 2000, p. 448). A mortality threat arises in longitudinal studies. This study took place over a 6-week period, not many years, and thus was not susceptible to significant threat of mortality. A location threat can occur if the collection of data is carried out in a place that might affect responses. This study was administered online from the home or office of each individual respondent, thus minimizing any location threat. Instrumentation threat is discussed in detail earlier in this section and was minimized by pre testing of the instrument. Validity of the instrument was tested and the questionnaire was adjusted until the instrument was found to be valid. Instrument decay can occur in interview surveys when the interviewer gets tired or rushed. As this study was not based on face-

to-face interviews, this threat was not applicable. Thus, one can conclude that the survey was an internally valid measure.

Online Survey

The survey was made available to all Michigan public school district superintendents and school board presidents in an online format through the services of zTelligence, a service for online data gathering used extensively by University of Michigan researchers and compatible with SPSS 11.0 software for the Macintosh OSX platform.

The advantages of self-administered survey methods are (a) there is the ability to administer the survey to large groups of participants in a short period of time; (b) the anonymity permits respondents to be more candid than in face-to-face interviews; (c) the outcome is less likely to be affected by the researcher; and (d) survey research with a high response rate is more suitable to probability sampling and generalization to larger populations (Fraenkel & Wallen 2000, pp. 431-466). In addition, the research of Sax, Gilmartin, Lee, and Hagedorn (2003) reported that use of an online data collection method, as opposed to paper-copy mailing, increased survey participation from between 16% and 22%.

Participants

No attempt was made to preselect a sample. All public school district superintendents and board presidents were invited to respond (N = 526 school districts, N = 1052 potential respondents). The Michigan Association of School Administrators (MASA) and the Michigan Association of School Boards (MASB) supported the study. Both organizations provided access to member lists, demographic data, and regional meetings. They each advertised and publicized the survey in regular communications with members and provided links to the survey on their home web page sites in order to motivate maximum participation.

Michigan state law designates all superintendents and school board members as *public* officials. All Michigan superintendents and school board presidents in the state's 526 public school districts were purposively surveyed, regardless of membership in the supporting professional organizations. Specific attention was given to encouraging participation by nonmembers of the professional organizations (10 districts for MASA, 1 district for MASB). Although this was essentially a self-selected respondent group, the goal was to achieve maximum

participation through persistent and methodical communication via mail, email, and follow-up phone calls.

zTelligence software provided the means for the researcher to track responses daily, which allowed focused energy on those individuals who had not yet responded. Further, the software allowed identification of which districts had only one respondent, giving the opportunity for pinpointed communication with the nonresponding member of the pair.

Variables in the Study

There were seven groups of variables that formed this study:

1. Method of superintendent evaluation
2. Areas of conflict between the board and superintendent
3. Political characteristics of the community
4. Training of the school board and superintendent
5. Characteristics of teaching and learning in the district
6. General influence of the superintendent in the district
7. Demographic characteristics of the community

Each group of variables was represented in a section of probing questions in the body of the survey.

Method of Evaluation

Method of evaluation was determined by a set of nine questions or variables directly related to the three evaluation methods precisely described by Candoli et al. (1997) in *Superintendent Performance Evaluation: Current Practice and Directions for Improvement*. The researcher added a fourth category called *None*, meaning that no evaluation was done.

- Evaluation Type *Global*: The board makes a broad *gut* level judgment or defers authority, and an evaluator is brought in from outside. (Normative) *This is “done to” the superintendent from inside or outside the organization.*
- Evaluation Type *Judgment*: A checklist or report card is used, often based on the AASA superintendent competencies. (Summative) *This is the board “doing it to” the superintendent.*
- Evaluation Type *Data-driven*: The board evaluates on the basis of the achievement of established goals and often uses a portfolio reporting method. (Formative) *This is both the board and the superintendent contributing to a “process” of improvement.*
- Evaluation Type *None*: No evaluation is done by the board.

A set of 26 questions established variables that sought to determine the effects of the evaluation method currently in use upon the relationship between the board and the superintendent, including goal setting, basis of evaluation, recent changes in evaluation method, satisfaction with the current method, and preferences.

Conflict

Thirty-five variables delved into perceived conflict in the board and superintendent relationship. The indicators of conflict were directly derived from the AASA publication *Building Better Board-Administrator Relations* (1992), and the NSBA's *Key Role of School Boards* (2000). These questions dealt with levels of respect, expectations, communication, leadership style, district educational philosophy, and perceived levels of conflict. Preferences were also assessed with indicators derived from Marcus, et al. (2003), including evaluation criteria and fairness/effectiveness of the evaluation method in current use.

Political Climate

Twenty-three variables sought information on district political climate. Four variables focused on identification of the specific district's political climate. These questions directly related to the

research of McCarty and Ramsey (1971). Table 1 provides a graphic delineation of categories derives from the McCarty and Ramsey study.

The four political categories were as follows:

1. Dominated. The board members themselves controlled board nominations and effectively controlled the board membership. The superintendent was a functionary. The general policy of the board was to keep taxes low and target education to meet specific local needs.
2. Factional. The board nominations were a carousel of members with issue-based agendas. The board itself was factionalized most of the time. The superintendent functioned as a political strategist. The general state of board policy was that policy changed with factional changes in an atmosphere of high conflict.
3. Pluralistic. An inclusive nominating caucus characterized the board, and members were status congruent. The superintendent served as a professional advisor. Board policy was generally based on research and community input.
4. Inert. The superintendent controlled the board nominations, and members sanctioned such power. The superintendent was the

decision maker and avoided conflict. Board policy was controlled by the superintendent and generally focused on the most basic education.

Nineteen variables sought to identify the political Strength of Relationship, and these included board meeting agenda, size of board, integrity, and educational levels.

Training

A set of 28 variables addressed development of related skills by the board and superintendent as public school officials (NSBA, 1996, 2000). Topics of inquiry included were membership and participation in state and national organizations, forms of training locally, and recognition of the key roles of the board members and the superintendent.

Teaching & Learning

A set of 13 variables attempted to identify the generally accepted teaching style in the district and the general attitude toward instruction based on the Newman and Wehlage (1995) model for authentic teaching and learning. The Newman and Wehlage model was a part of the basis for the development of the MEAP state assessment test and corresponding curriculum standards in Michigan.

General

A five-statement set probed ways in which the superintendent exerted influence in the district (Crowson & Morris, 1992). These contributed to the calculation of the Overall Strength of Relationship.

Demographic Data

Age, gender, and ethnicity of each respondent were collected in the online survey format. Other demographic data were collected from the Standard and Poor's School Economic Survey of Michigan (Standard & Poor's, 2003) website. Nonsurvey-based demographic data was entered into the database by a graduate research assistant and verified by the researcher. Data collected for each Michigan district included (a) socioeconomic status, (b) size of district, (c) Michigan Education Assessment Program (MEAP) passing rate, and (d) per-pupil expenditure. These data were not used to calculate the Strength of Relationship Scale.

Response Format

Most items required the respondent to choose the degree of agreement or choose one from an interval. A scale of four response categories was used intentionally (*Strongly Agree, Agree, Disagree, Strongly Disagree*) to limit reflexive selection of the middle ground. In

some cases respondents were asked to explain their choices in a few sentences. The complete survey instrument, as copyrighted by the researcher, is attached at the end of this document as Appendix A. The Human Subjects Institutional Review Board (IRB) of Eastern Michigan University determined that the rights and welfare of the individual subjects involved in this research were carefully guarded, that the methods used to obtain informed consent were appropriate, and that the individuals were not at risk. The IRB letter of approval may be found as Appendix B, and the Informed Consent Statement may be found as Appendix C.

Procedures

The following strategies and tactics (in chronological order) were employed to maximize the response rates in both subgroups:

- Survey questions were entered into the online server (zTelligence) and tested through the paid services of Markettools, a California-based, online-survey coordination service. Two individuals administered the survey process; one oversaw the survey while one maintained daily communication and gave instruction to the researcher on the use of zTelligence reporting software.

- Markettools deployed invitations to participate in the survey via email addresses provided by MASA and MASB to all superintendents and school board presidents of K-12 public school districts in Michigan. The researcher designed and wrote all communiqués. All email messages and printed mailings used in this study may be found in Appendix D. Each respondent was assigned a unique identifiable link to the active survey site directly accessible from the original email invitation. Nonmember districts (10 MASA, 1 MASB) were telephoned, and email addresses were obtained for their superintendents and board presidents. Approximately 230 of the board presidents had no email listings, whereas all superintendents had listings. These email-deficient respondents were mailed a written invitation to participate through a general link provided on the home web page of MASA.
- All respondents were informed that if they would rather complete the survey on paper, a paper copy would be mailed to them with a stamped return envelope. Four respondents chose the paper format; responses were entered through the general

link at MASA by the researcher. All other data was collected on line.

- Informed consent was given via a printable opening Consent Page. Respondents were required to consent before the online survey could be accessed. The informed-consent statement as approved by the Human Subjects Institutional Review Board of Eastern Michigan University may be found as Appendix C.
- The survey remained on line for a 6-week period, from April 15, 2004, to May 31, 2004. Weekly reminders were emailed to all respondents who had not responded by that date. Individual messages were emailed to those respondents who had begun but not completed the survey. These weekly reminders were designed and written by the researcher and deployed by Markettools. See Appendix D for all written and printed material.
- MASB provided the email addresses for all district executive secretaries. The researcher wrote a communiqué to all district-level secretaries to inform them of the survey and provide them with all the information they needed to support their superintendents and board presidents in completion of the survey. During the 6-week survey period, three such

communiqués were emailed to secretaries whose superintendents and board presidents had not responded.

- During the course of the 6-week deployment, two mailings were sent through the United States Postal Service to potential respondents who had not participated. At Week 2, a brochure was sent, and at Week 4, a post card was sent. See Appendix D: Printed Materials for all email messages and printed mailings.
- Some difficulties that occurred with using the online survey, as reported by respondents, were the following:
 - In two cases, the unique access link did not work. These respondents were referred to the general link at www.gomasa.org.
 - The survey programming would not let the respondent continue without answering all previous questions and filling in all response boxes. Four (4) respondents were frustrated by this and were directed to type “none” in response boxes in order to continue.
 - Two respondents replied that they did not complete the survey because they came to a question that, in their opinion, had no appropriate response for selection.

- The MASA and MASB websites each carried a top-priority announcement and link to the survey on its home web page. Thematic graphics were depicted on the announcement in order to maintain the visual theme for easy recognition of materials related to the survey. Every communication carried similar graphics.
- MASA included an article about the survey in its *Fortnighter* publication, both online and in print over a 1-month period, or two publications.
- Survey data was collected online and downloaded as a Microsoft Excel file and as an SPSS Mac- or PC-compatible “.por” file.

Variable Constructions

Several variables were used in a group to identify certain characteristics. Certain new variables were created by the researcher from data sets within the questionnaire for use in analysis. These were as follows:

- Identification of evaluation type (EvalID)
- Identification of political climate type (PolID)

- Individual strength of relationship for evaluation type, conflict level, political climate, training, teaching and learning, and general (EvalSOR, PolSOR, TrainSOR, TlSOR, Gensor)
- Overall strength of relationship (OverSOR)
- Demographic constructs (district size, per-pupil expenditure, socioeconomic status, and student achievement)
- Identification of groups of conflict (money, roles, other, and none)
- Identification of areas of and degree of agreement/disagreement between the board and superintendent

Specific procedures and logic were used in each of these constructions, as discussed in detail below.

EvalID Construction

Eight variables (variables 8-15 in the downloaded data set) were used to determine the type of evaluation used in the district of each respondent. These variables were combined and recoded into four categories, which corresponded to the Candoli et al. (1997) designations. The None category was added by the researcher. The resulting variable was assigned a letter designation that distinguished the respondent's category of evaluation: A = Global, B = Judgment,

C = Data Driven, and D = None. Appendix E.1: Recode Syntax for Constructed Variables, SPSS 11.0 delineates the specific means of recoding the eight variables.

Respondents were given the option to choose Other and type a short explanation into the online database in response to the question item regarding the type of evaluation used. Forty-nine respondents chose to respond by writing in the field provided. All 49 fill-ins in the Other designation were recoded into a constructed variable (A, B, C, D). Appendix E.2 Variable 15: Recode Syntax for Constructed Variables, SPSS 11.0 reports the specific path for constructing the variable. A qualitative-style, color-coded, open coding theme analysis, corroborated by previous answers from the respondents, placed each of these 49 in a category A, B, C, or D.

After the second recoding, nine responses fell into a double-letter group (Examples: AB, BC, CD). The researcher studied each individual respondent's answers as a whole. It was determined that each of the eight double-coded respondents recognized the need for positive change and was in transition from one form of evaluation to another. The decision was made that if the recoded category were a double letter, then the default would be to the second letter, or the

category to which the respondent strove to achieve. These nine were recoded into A, B, C, and D. The SPSS syntax is reported in Appendix E.3 *_m*: Recode Syntax for Constructed Variables, SPSS 11.0.

Finally, all (evaluation type) recodes were integrated into the constructed variable “_m,” with all 397 cases categorized into one of the four letter designations.

Using a fill-in format in the online database, variable 38 (var38 in the downloaded data set) asked the respondent’s “preference” of evaluation method. Using an open coding, color-coded, qualitative-style system to identify themes, the responses were recoded into the A through D evaluation-identification categories. “No response” was recoded as “Satisfied.” The constructed variable for preference of evaluation method became “_p,” which when integrated, designated one of the four letter categories for evaluation (A through D).

Appendix E.4 *EvalID_p*: Recode Syntax for Constructed Variables, SPSS 11.0 reports the process.

PolID Construction

The district political climate type was determined by posing a set of four descriptions, then offering the respondent a range of agreement choices (*Strongly Agree, Agree, Disagree, Strongly*

Disagree). The four variables (var73-76 in the downloaded data set) were recoded into letter categories corresponding to the McCarty and Ramsey (1971) study of political climate in public school districts (E = Dominated, F = Factional, G = Pluralistic, and H = Inert). The format for recoding is outlined in Appendix E.5 PolID: Recode Syntax for Constructed Variables, SPSS 11.0.

The results produced numerous combinations of the four letter categories. Therefore, the set was recoded again, such that combinations where F or G dominated with a response of *Strongly Agree* or *Agree*, the category reverted to F or G. If F and G appeared together equally, F dominated because if a school board is factionalized, then pluralism is never truly possible. Appendix F: EvalID and PolID Frequencies, depicts frequencies for political type and evaluation type and theory to explain the high number of reported G (Pluralistic) political type.

These PolID constructions resulted in all 397 cases being designated by one of four letters (E through H) corresponding to political climate categories from the McCarty and Ramsey (1971) study.

Individual Strength of Relationship Constructions

One goal of this study was to create a quantifiable scale that might be used to assess the relation and degree of influence between various factors that affect the board and superintendent relationship (evaluation type, conflict level, political climate, training of board members, teaching and learning styles, and general). The created scale was named the Strength of Relationship Scale. The use of lowercase *sor* indicated individual strength of relationship in the factors listed above. The use of uppercase *SOR* indicated the combination of *sor* scores into an Overall Strength of Relationship (OverSOR) designation.

The 152 variables of the survey questionnaire were identified and numbered. Each variable represented a response to questions in the six areas of inquiry: evaluation type, conflict level, political climate, training, teaching and learning, and general. Each variable was rated from -3 to 3 on a 6-point scale (-3, -2, -1, 1, 2, 3). Ratings were derived from prior research in conjunction with corroboration from anecdotal writing. This process in large part depended upon the judgment of the researcher and the researcher's correlation of research and experiential reporting from the field even though the

ratings were grounded in the literature. The higher was the number assigned, the stronger was the relationship. The Strength of Relationship Scale (Duvall, 2004) ratings may be found in Appendix G.

The questionnaire included two other options for respondents to write in a response rather than choose among a group (var130 and var131 in the downloaded data set, respectively) describing the role of the board and the superintendent. The researcher recoded the open-ended *fill in* questions by grouping responses according to the context of the variable in the area of inquiry, that is, superintendent's role or board member's role. See Appendix E.6 Role of Board: Recode Syntax for Constructed Variables, SPSS 11.0 and Appendix E.7: Role of Superintendent: Recode syntax for constructed variables, SPSS 11.0 for details of the recoding. This process resembled the qualitative analysis process of open coding color-coded words and grouping input thematically. These theme words were indexed into broader thematic categories for later use. Indexed responses were then recoded into the 6-point scale and were included in the Strength of Relationship (sor) scores.

Strength of Relationship (sor) scores were calculated for each area of inquiry. A factor analysis of the calculated Evaluation sor,

Conflict sor, Political sor, Training sor, Teaching and Learning sor, and General sor scales revealed that only the evaluation, conflict, political climate, and general Strength of Relationship scales correlated highly to form the Overall Strength of Relationship factor (OverSOR). The training of the board sor scale (Trainsor) was found to correlate with the teaching and learning sor scale (TLsor) to form a second factor (TLSOR). This two-factor solution was found to explain roughly 65% of the original variation in the six sub-scale variables. The Overall Strength of Relationship (OverSOR) factor, calculated from the scores on the first four sor subscales, became the variable OverSOR, and the scores on the Training sor scale and the Teaching and Learning sor scale were combined to form the variable TLSOR.

Demographic Constructs

The *headcount* variable was transformed into district Size using the designations Urban, Suburban, and Rural as defined by Glass (2000). Rural = 300 to 2,999 pupils, Suburban = 3,000 to 24,499 pupils, and Urban = 25,000 or more pupils. Appendix E.8 District Size: Recode Syntax for Constructed Variables, SPSS 11.0 specifies the syntax for accomplishment of the constructed variable for district size. The other district-level data (per-pupil expenditure, socioeconomic

status, and student achievement) were used in their original form from the Standard and Poor's (2003) School Economic Survey database

Conflict Constructs

Using a fill-in format in the online database, variables 70 through 72 (var70-72 in the downloaded data set) asked the respondents to list three prevalent types of conflict between the board and the superintendent. Using an open coding, color-code, qualitative-style system to identify themes, the responses were recoded into three categories of conflict that were labeled "Money," "Roles," and "Other." No response, the word *none*, or similar words were recoded as "No Conflict." Appendix E.9 Conflict: Recode Syntax for Constructed Variables, SPSS 11.0 reports the syntax for this process. Constructed variables *_m* (self identified evaluation type) and *_p* (preferred evaluation type) were compared and included in calculations of the level of conflict.

Agreement Constructs

In order to calculate Agreement between superintendent and board, a data set was derived from the Complete data set that identified Paired responses. Complete response was defined as all

questions on the survey being answered in full. Paired response was defined as Complete response by both the superintendent and the board president in a given district. Of the 397 Complete responses, 86 districts reported Paired responses. District superintendents were identified in the Paired data set as *1* and board presidents as *0*. This Paired data set was used in the construction of agreement variables.

First, the 28 variables for use in assessment of Agreement were identified as reported in Appendix H. The responses to these original variables were compared within the Paired data set. If the responses did not agree for the board president and the superintendent, a score of 1 was assigned. Then, agreement was assessed in terms of self-identified evaluation type (*_m*) and political climate type (*PolID*). Disagreement between the board president and the superintendent was indicated with a score of 1. Scores in the three areas were added. The higher the numerical score was, the lower was the level of Agreement. See Appendix E.10 Agreement: Recode Syntax for Constructed Variables, SPSS 11.0 for the specific variables used and the recode syntax. These agreement scores were later used in analyses.

Summary of Constructed Variables

SPSS coding methods, as described in the appendices, were used to identify evaluation types and political climate types by letter designations. A Strength of Relationship Scale was devised, and individual scores were derived for each area of inquiry. The higher the number score was, the stronger the relationship was. A factor analysis that identified Overall Strength of Relationship (OverSOR) and Training, Teaching, Learning Strength of Relationship (TLSOR) as two separate constructs in the data was completed. Conflict categories were derived from the data, and district-level areas of agreement and disagreement were constructed from the data for use in analyses.

Data Analysis

Sample Size

The size of the Population was $N = 1052$, that is, the total number of districts in Michigan ($N = 526$ districts \times 2 respondents from each district). The researcher tabulated the Complete responses ($n_{\text{complete}} = 397$) and Partial responses ($n_{\text{partial}} = 675$). Complete was defined as all questions on the survey instrument being fully answered. Partial was defined as some but not all questions on the survey instrument responded to in full. Also tabulated were the

number of districts where both the superintendent and the board president responded completely, Paired responses (n = 86), and the number of districts where at least one of the pair responded completely (n = 308). Three districts were dropped from the Paired data set because they fell into the None category, and so few responses in this category did not permit effective analysis.

Statistical Analyses

Descriptive statistical analyses (e.g., descriptive summaries, frequency tabulation, and cross tabulation) were initially carried out to describe the sample of respondents in terms of Complete and incomplete status, Paired responses, conflict levels, and demographic characteristics. Descriptive analyses were used to identify unusual data points for the key analysis variables that might have had an influence on any subsequent analyses.

The following statistical analyses of the data were then performed in order to test the hypotheses proposed earlier in this chapter:

Hypothesis 1: Evaluation Method. Method of evaluation of the superintendent is a significant indicator (either positive or negative depending on the type of evaluation) of the strength of relationship between school board and superintendent. In order to test Hypothesis

1, means were computed on the six Strength of Relationship variables for respondents claiming each evaluation method, and the means were then compared using one-way Analysis of Variance (ANOVA). General linear models were then fitted to the data in order to compare the means for the different evaluation methods while adjusting for other factors that might have influenced the scores on each Strength of Relationship outcome. Standard assumptions behind the general linear regression model were assessed in all cases, and appropriate transformations were conducted when necessary using Box-Cox (Box & Cox, 1964) methodology. Hypothesis 1 would be supported if the means on the strength of relationships variables were to differ significantly between the different methods of evaluation when controlling for other likely predictors of strength of relationship.

Hypothesis 2: Conflict Levels. Low levels of conflict between the board and the superintendent correlate with Data-driven evaluation type and Pluralistic political climate type. In order to test Hypothesis 2, four separate logistic regression analyses were conducted, considering the four dummy variables indicating the four types of conflicts (Money, Roles, Other, and No Conflict) as dependent variables and the self-reported evaluation type, the self-reported

political type (PolID), and district-level variables (e.g., size, per-pupil expenditure, socioeconomic status, and student achievement) as predictor variables. Hypothesis 2 would be supported if data-driven evaluation type and pluralistic political type were to predict higher odds of No Conflict and lower odds of Money, Roles, and Other types of conflict.

Hypothesis 3: Agreement, Overall Strength of Relationship (OverSOR), and MEAP. High levels of agreement and higher Overall Strength of Relationship (OverSOR) between the board and the superintendent correlate with higher district student achievement (MEAP passing rate). In order to test Hypothesis 3, the correlation between the total number of disagreements between the board president and superintendent and the district-level MEAP score was assessed in the district-level (Paired) data file described earlier. Similarly, the average of the Overall Strength of Relationship variable (OverSOR) was computed for each Paired district (both the board president and superintendent reporting), and the correlation of the MEAP score with the average Overall Strength of Relationship variable was assessed. A linear regression model was then fitted to the district-level data, considering the MEAP score as the dependent variable, and

the average Overall SOR, total number of disagreements, and other likely district-level predictors of MEAP performance as independent variables. As in Hypothesis 1, standard linear regression modeling assumptions and diagnostics were assessed, and appropriate measures were taken if there were violations of the assumptions. Hypothesis 3 would be supported if the relationship between the MEAP score and the total number of disagreements were estimated to be negative and statistically significant in the regression model when controlling for other district-level predictors and if the relationship between the average Overall SOR variable and MEAP score were positive and statistically significant in the regression model.

Summary

In this chapter, the researcher discussed the three hypotheses, research questions, and the research design. Construction of the survey instrument and tests for internal validity were detailed. The variables in the study and procedures for the collection of data were reported. Sample-size characteristics and a report on the construction of certain variables from the raw data preceded analysis objectives, and measures were reported for each hypothesis.

In the next chapter, data collected during the survey period will be analyzed in terms of the stated hypotheses and research questions and reported as *Results*.