Chapter 3

Methodology

The purpose of this study is to examine the perceptions of selected school board members regarding the quality and condition, maintenance, and improvement and renovation of existing public school facilities.

The four purposes of this chapter are to (1) describe the research methodology of this study, (2) explain the sample selection, (3) describe the procedure used in designing the instrument and collecting the data, and (4) provide an explanation of the statistical procedures used to analyze the data.

Research Methodology

A descriptive research methodology was used for this study. A survey was administered to a selected sample from a specific population identified by the National School Board Association. The term 'survey' is commonly applied to a research methodology designed to collect data from a specific population, or a sample from that population, and typically utilizes a questionnaire or an interview as the survey instrument (Robson, 1993).

Surveys are used to obtain data from individuals about themselves, their households, or about larger social institutions (school boards). Sample surveys are an important tool for collecting and analyzing information from selected individuals. They are widely accepted as a key tool for conducting and applying basic social science research methodology (Rossi, Wright, and Anderson, 1983).

American society is familiar with the use of surveys to assess issues or project trends: marketing researchers use surveys to study consumer preference and shopping patterns (Leary, 1995). The Gallup poll on education in America is an ongoing project of Phi Delta Kappa. Results of the annual survey are published each year in Kappan magazine. Selected American television viewers participate in the Nielson surveys,

designed to estimate the size of various television program audiences for the purpose of establishing advertising rates. Such sample surveys are comprised of standardized methodologies designed to gather information by examining systematically identified population samples. Social scientists rarely draw conclusions without disaggregating the sample population into various sub-groups. For example, the Gallup polls typically examine issues disaggregated by gender, ethnicity, education and region of the country (Rossi, Wright and Anderson, 1983).

According to Leary (1995), there are distinct advantages in using a questionnaire vs. an interview methodology: questionnaires are less expensive and easier to administer than personal interviews; they lend themselves to group administration; and, they allow confidentiality to be assured. Robson (1993) indicates that mailed surveys are extremely efficient at providing information in a relatively brief time period at low cost to the researcher.

For these reasons, the researcher chose a descriptive research methodology and designed a questionnaire survey instrument to assess the perceptions of selected school board members regarding the quality and condition, maintenance, and improvement and renovation of existing public school facilities throughout the United States.

Sample

For this study, nine regions of the United States were identified by The National School Boards Association (NSBA) and The American School Board Journal. The methodology for this study was a stratified random sample of school board members across the country that subscribed to The American School Board Journal. Gay (1987) reports:

> Random sampling is the best single way to obtain a representative sample. No technique, not even random sampling, *guarantees* a representative sample, but the probability is higher for this procedure than for any other. (p. 104)

Gay also agrees that stratified random sampling is an appropriate methodology in order to make proportionate, and therefore meaningful, comparisons between sub-groups in the population. Robson (1993) tells us that sampling theory supports stratified random sampling as an efficient choice because the means of the stratified samples are likely to be closer to the mean of the population overall. Finally, Leary (1995) indicates that a stratified random sample will typically reflect the characteristics of the population as a whole. Consequently, the sample in this study was disaggregated by region to address the fact that there is wide variance in the number of school board members within each geographical subgroup (Table 1.)

Table 1:

Regions of the United States according to National School Boards Association Membership as of December, 1997

NEW ENGLAND REGION (membership: 1,212)		
Connecticut	Massachusetts	Rhode Island
Maine	New Hampshire	Vermont
MIDDLE ATLANTIC REGION (membership: 2,745)		
New York	New Jersey	Pennsylvania
EAST NORTH CENTRAL REGION (membership: 4,733)		
Ohio	Illinois	Wisconsin
Indiana	Michigan	
WEST NORTH CENTRAL REGION (membership: 2,704)		
Minnesota	North Dakota	Nebraska
Iowa	South Dakota	Kansas
Missouri		
SOUTH ATLANTIC REGION (membership: 1,867)		
Delaware	Virginia	South Carolina
Maryland	West Virginia	Georgia
District of Columbia	North Carolina	Florida
EAST SOUTH CENTRAL REGION (membership: 833)		
Kentucky	Alabama	Mississippi
Tennessee		
WEST SOUTH CENTRAL REGION (membership: 1,720)		
Arkansas	Oklahoma	Texas
Louisiana		
MOUNTAIN REGION (membership: 1,729)		
Montana	Colorado	Utah
Idaho	New Mexico	Nevada
Wyoming	Arizona	
PACIFIC REGION (membership: 1,701)		
Alaska	Oregon	Hawaii
Washington	California	

A nationwide stratified random sample was selected to receive a mailed questionnaire for this study. This sample is indicated below and was developed from the subscription list of The American School Board Journal (Table 2). Only school board member subscribers were included for the purposes of this survey. The numbers in the sample are based on studies by Krejcie and Morgan (1970) regarding sample size for research activities.

Table 2:

Population and Sample by Region (National School Boards Association, May, 1997)

Region	School Board Member Subscribers	N
New England	1,212	37
Middle Atlantic Region	2,745	83
East North Central Region	4,733	142
West North Central Region	2,704	81
South Atlantic Region	1,867	56
East South Central Region	833	25
West South Central Region	1,720	52
Mountain Region	1,729	52
Pacific Region	1,701	51
TOTAL:	19,244	579

The researcher chose a 3% random sample of the population consistent with recommendations for determining size of a random sample (Krejcie and Morgan, 1970).

Instrumentation

The survey used in this study addressed two purposes. The first purpose was to examine the perceptions of selected school board members regarding the quality and condition, maintenance, and improvement and renovation of existing public school facilities. The second purpose was to collect additional data requested by The American School Board Journal but not utilized in this study.

The survey instrument was divided into three sections. Section One: Existing School Facilities, items 1-21, addressed the perceptions of respondents about selected

issues relating to existing public school building quality and condition, maintenance, and improvement and renovation. Items 1-7 examined how board members perceive the quality and condition of school facilities within their district. Factors including age, environmental hazards, technology and appropriate match of facilities to the needs of the educational program were used to measure these perceptions. Items 8-14 addressed issues regarding the maintenance of existing public school facilities within each respondent's district. Perceptions of school board members regarding adequacy of funds spent on maintenance, percentage of the school system budget targeted for maintenance, and the role and responsibility factor for addressing facility maintenance were measured. Items 15-21 surveyed actions that the school board takes within the respondent's district to address the improvement and renovation of existing school facilities. Adequacy of information received to make decisions, role of the board in initiating action, type of action taken, adequacy of funding to support improvement and renovation, primary impetus to initiate action, funding proposals and role of the federal government with respect to funding were measured in this part of the survey.

The survey items in this study were developed as a result of an analysis of previous studies, discussions with practitioners in the field, and a review of the literature. The relationship of each survey item to the research questions in this study is expressed in the chart found in Appendix A. The survey items are located in Appendix B.

Section Two: Demographic Information, items 1- 20, obtained demographic information about the selected school board members who responded to the survey. Item 1 identified the geographic region of the respondent. Items 2-6, 9, 11, 12, 14, 15 and 17 measured the respondent's perception about these issues according to the variables specified; i.e., size of district (2), community type (3), gender (4), ethnicity (5), age (6), children attending public school (9), family income (11), children attending private school (12), political leanings (14), board member? (15) and size of school board (17).

Section Three: Issues, measures the respondent's indication of the top three pressing concerns within their district and was not information used for the purposes of this study.

Reliability and validity are important aspects of questionnaire design. According to Suskie (1996), a perfectly reliable questionnaire elicits consistent responses. Although

it is difficult to develop, it is reasonable to design a questionnaire that approaches a consistent level of response.

Leary (1995) offers seven guidelines for designing a useful questionnaire:

1. Use precise terminology in phrasing the questions.
2. Write the questions as simply as possible, avoiding difficult words, unnecessary jargon, and cumbersome phrases.
3. Avoid making unwarranted assumptions about the respondents.
4. Conditional information should precede the key idea of the question.
5. Do not use double-barreled questions. (questions that ask more than one question but provide the respondent with the opportunity for only one response)
6. Choose an appropriate response format.
7. Pretest the questionnaire. (pp.81-82)

Robson (1993) indicates that a high reliability of response is obtainable by providing all respondents with the exact same set of questions. Validity is inherently more difficult to establish within a single statistical measure. If a questionnaire is perfectly valid, it must measure in such a way that inferences drawn from the questionnaire are entirely accurate. Suskie (1996) reports that reliability and validity are enhanced when the researcher takes certain precautionary steps:

> Have people with diverse backgrounds and viewpoints review the survey before it is administered. Find out if:
>
> - each item is clear and easily understood
> - they interpret each item in the intended way
> - the items have an intuitive relationship to the study's topic and goals, and
> - your intent behind each item is clear to colleagues knowledgeable about the subject" (p. 59).

Considering these principles, the researcher asked a panel of experts, including a former school board chairman, an assistant superintendent for facilities, and a maintenance director to respond to a survey response instrument and the proposed questionnaire. Each panelist was first asked "What do you see as the major issues with existing public school

facilities today?" The panelist was then asked to review the survey questionnaire and to complete the survey response instrument. Responses to the instrument were grouped as follows: (1) clarity of directions; (2) clarity of questions; (3) relevancy of the question as an important aspect of a major issue; and (4) narrowness or constraint of response. Finally, the panelist was asked, "Are there any other issues that you think should be included in the survey?" Results of the responses and questions were collected and analyzed. The survey response instrument is found in Appendix C. The questionnaire was also reviewed and approved by the research department of The American School Board Journal. These procedures resulted in the questionnaire used in this study.

Data Collection

Questionnaires were mailed in January 1998 by The American School Board Journal to each of 579 school board members selected for the study, accompanied by a cover letter (Appendix D) and a coded postage-paid, self-addressed return envelope (Appendix E). Recipients were requested to complete the questionnaire (Appendix B) and to return it to The American School Board Journal as soon as possible. One week later, a postcard reminder (Appendix F) was sent to each recipient of the questionnaire. Three weeks following the date of the initial cover letter, a follow-up letter (Appendix G) and a replacement questionnaire was mailed to all non-respondents. Six weeks following the date of the initial mailing, another replacement questionnaire and final letter (Appendix H) was sent to non-respondents. According to Suskie (1996), this timetable serves as a means of reminding recipients to complete the survey without going to great expense. It also contributes to the likelihood of doubling the initial response rate, generally less than 40 percent after the first mailing. For this reason, the researcher was careful to avoid constructing a complex and lengthy questionnaire.

Method of Analysis

The data analysis consisted of examining the surveys for correctness and completeness, coding and keying data into a database in Number Cruncher Statistical System (NCSS), and performing an analysis of descriptive responses (all of Section One: items 1-21; and parts of Section Two: items 2-6, 8-9, 11 and 14) according to frequency distributions and descriptive statistics. All incomplete surveys were discarded from the analysis. Frequency tables and descriptive statistics were constructed to display results with respect to each of the three research questions.

Summary

The purpose of this chapter was to describe the research methodology of this study, explain the sample selection, describe the procedure used in designing the instrument and collecting the data, and provide an explanation of the statistical procedures used to analyze the data.