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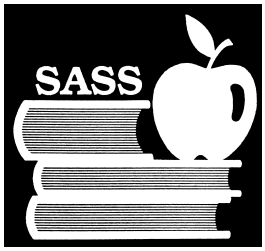
An Analysis of Total Nonresponse in the 1993-94 Schools and Staffing Survey (SASS)



U.S. Department of Education
Office of Educational Research and Improvement **NCES 98-243**

NATIONAL CENTER FOR EDUCATION STATISTICS

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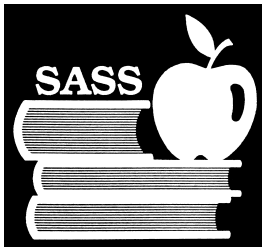

David Monaco
Sameena Salvucci
Fan Zhang
Mingxiu Hu
Synectics for Management Decisions, Inc.

Kerry Gruber, National Center for Education Statistics

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Contact:
Project Officer
Kerry Gruber
(202) 219-1461
FAX: (202) 219-1325

Foreword

This technical report provides results of an analysis of unit response rates for the components of the 1993-94 Schools and Staffing Surveys (SASS). The study was motivated by the general need to continually evaluate and improve the quality of SASS data, and more specifically to identify potential sources of nonsampling error associated with nonresponse in SASS.

The report will be of interest to users of SASS data, to persons responsible for various aspects of the design and operation of the SASS surveys, and to anyone interested in the quality of survey data, especially data from mail surveys and surveys related to education.

As background, the report describes the survey design and nonresponse adjustment procedures for each of the components of SASS. A primary focus of the analysis is to compare the response rates for known characteristics of schools, administrators, teachers, school districts, libraries, librarians, and student records, and to assess the extent and pattern of these differences. Where possible, findings from the 1993-94 analysis are compared to results from an earlier companion report, *An Exploratory Analysis of Response Rates in the 1990-91 Schools and Staffing Surveys (SASS)* (Scheuren, Monaco, Zhang, Ikosi, Chang, and Gruber, 1996). In addition, due to the multi-stage sample design of SASS, the hierarchical nature of response rates is examined with interesting results. Finally, a multivariate model of unit response is developed for one of the SASS components to explain the relationship between these factors to the level of unit response.

Paul Planchon
Associate Commissioner
Surveys and Cooperative Systems Group

Daniel Kasprzyk
Program Director
Education Surveys

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Chapter 1

Overview

The insidious thing about biases is their constancy and the consequent difficulty of detecting them. -- W. Edwards Deming (1950)

1.1 Introduction

The 1993-94 Schools and Staffing Survey (SASS) is the third study of public and private elementary and secondary schools in a series of surveys begun in 1987-88 by the National Center for Education Statistics (NCES).[1] Survey data from schools, local education agencies (LEAs), administrators, and teachers in the United States were collected by mail with telephone follow-up of nonrespondents first during the 1987-88 school year and again during the 1990-91 and the 1993-94 school years. The series provides data on school and teacher characteristics, school operations, programs and policies, teacher demand and supply, and the opinions and attitudes of teachers and school administrators about policies and working conditions. The analytic power of the data is enhanced by the ability to link survey data for individual LEAs, schools, administrators, and teachers. In 1993-94 new library, librarian, and student SASS components were initiated that could also be linked. In addition, computer assisted telephone interviewing (CATI) facilities were introduced for the first time during the 1993-94 SASS and were used extensively for nonresponse follow-up.

This study is part of a systematic effort by NCES to evaluate the quality of SASS and as such this report is designed to enable users to understand the limitations of the 1993-94 SASS data and to provide managers information for planning future rounds of SASS. A comprehensive analysis of response rates for the 1990-91 SASS is found in a companion report by Scheuren, Monaco, Zhang, Ikosi, Chang, and Gruber (1996). A number of other reports have also been issued as part of the SASS quality review, notably Jabine (1994).

Results from SASS are affected by two sources of error: sampling error and nonsampling error. Sampling errors are the result of basing survey estimates on a sample rather than all units in the population of interest and are published for selected estimates in all reports based on SASS data[2]. In addition, generalized variance functions which provide approximations of sampling errors for all SASS estimates are provided.[3] The other source of error is called nonsampling error, and includes all errors that are not due to sampling.

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[1] The U.S. Bureau of the Census carries out the main survey operations for SASS -- including sample selection, data collection, and data processing -- under an interagency agreement, according to specifications provided by NCES.
[2] Each SASS publication includes separate tables with sampling errors for selected estimates included in the publication.
[3] For the 1987-88 SASS generalized variance functions (GVFs) see Salvucci and Holt (1992),*Generalized Variance Estimates for SASS.* Also for 1987-88 SASS GVFs see Salvucci, Galfond and Kaufman (1993), "Generalized Variance Functions for the Schools and Staffing Surveys," *Proceedings of the Section on Survey Research Methods, American Statistical Association.* For the 1990-91 SASS generalized variance functions see Salvucci and Weng (1995),*Design Effects and Generalized Variance Functions for the 1990-91 Schools and Staffing Survey (SASS)*,NCES 95-340-I and

This report is concerned with the most pervasive and challenging source of nonsampling error in estimates from sample surveys which is the error associated with incomplete data. Incomplete data resulting from three sources are of particular importance in sample surveys: item nonresponse, unit nonresponse, and undercoverage.[4] Item nonresponse in SASS can arise when a response is missing for an item (e.g., the number of students enrolled in grade 1 at a school around October 1, 1993) in an otherwise completed interview. Unit nonresponse can arise in SASS when a response is not obtained for a sampled unit (e.g., school, local education agency -- LEA, teacher, administrator, library, librarian, student). The concern for nonresponse, whether item or unit, is twofold. Nonresponse reduces the sample size and thus increases the sampling variance. Respondents may also differ significantly from nonrespondents, thus, the estimate obtained from respondents can be biased and the magnitude of this bias may be unknown. Concerns about bias are generally greater as the rate of nonresponse increases. Undercoverage in SASS can arise when units that should be in the frames (e.g., lists of public and private schools in the U.S.) from which a sample is selected are not in those frames, or units in the sample are mistakenly classified as ineligible or are omitted from the sample or from the units interviewed.

The particular focus of this report is to quantify the extent of unit nonresponse in the 1993-94 SASS and to assess the impact of differences in the known characteristics of respondents and nonrespondents for different subgroups of the survey populations in order to provide some indication of the *potential* effects of nonresponse bias and to suggest priorities for future SASS research. While the scope of the report is chiefly descriptive, inferential modeling of the response rates for one component is also provided as an example for future SASS research.

1.2 Structure of the Report

The report has eight chapters. The remaining part of this chapter provides background information on the design and operation of the 1993-94 SASS and a brief look at item nonresponse in the 1993-94 SASS. After this overview chapter, Chapters 2 and 3 include a descriptive analysis of response rates for the four core components of the 1993-94 SASS: schools, administrators, teachers, and LEAs and the three new components: libraries, librarians, and students, respectively. In order to make each of the component sections self-contained, each begins with a description of the frame development, sample selection, and nonresponse adjustment procedures. Chapter 4 summarizes the impact of differences in characteristics of respondents and nonrespondents across the components. Chapter 5 provides an analysis of the hierarchical nature of the nonresponse with an examination of whether the response rate for one component of SASS is associated with the response rate for another component of SASS. Chapter 6 provides further information on the components of nonresponse (e.g., out-of-scope, refusals, non-locatables). Chapter 7 provides a multivariate nonresponse model of the public school component of the 1993-94 SASS. The final chapter provides highlights of findings and corresponding recommendations for the conduct and analysis of future rounds of SASS. A glossary, list of references, and appendices follow the final chapter. The appendices contain unweighted and weighted response rate tables at the national, state/association, and regional levels for several variables and discuss the more technical aspects of the response rate analysis.

Salvucci, Holt, and Moonesinghe (1995*), Design Effects and Generalized Variance Functions for the 1990-91 Schools and Staffing Survey (SASS),* NCES 95-340-II.

[4] Madow, Nisselson, and Olkin. (1983). *Incomplete Data in Sample Surveys, Vol. 1, Report and Case Studies*

1.3 Overview of the 1993-94 SASS Design [5]

The 1993-94 SASS consists of a number of surveys: the School Survey, the School Administrator Survey, the Teacher Survey, the Teacher Demand and Shortage Survey, the Library Survey, the Librarian Survey, and the Student Survey. Some 13,000 schools and administrators, and 67,000 teachers were selected. In addition, 5,500 local education agencies associated with the selected schools and 100 districts not associated with schools were selected in the 1993-94 SASS. Some 7,600 libraries and librarians, and 6,900 students were also selected.

These surveys have the same reference period in SASS and result in files that can link data about the LEAs, schools, principals, teachers, libraries, librarians, and students. A schematic diagram of the sample selection and data collection process is shown in Figure 1.1. The sample selection proceeded in stages:

1) Schools were selected first. Each selected school received a school questionnaire and an administrator questionnaire.

2) A sample of school libraries and librarians was selected from the school sample. Each received a library as well as a librarian questionnaire.

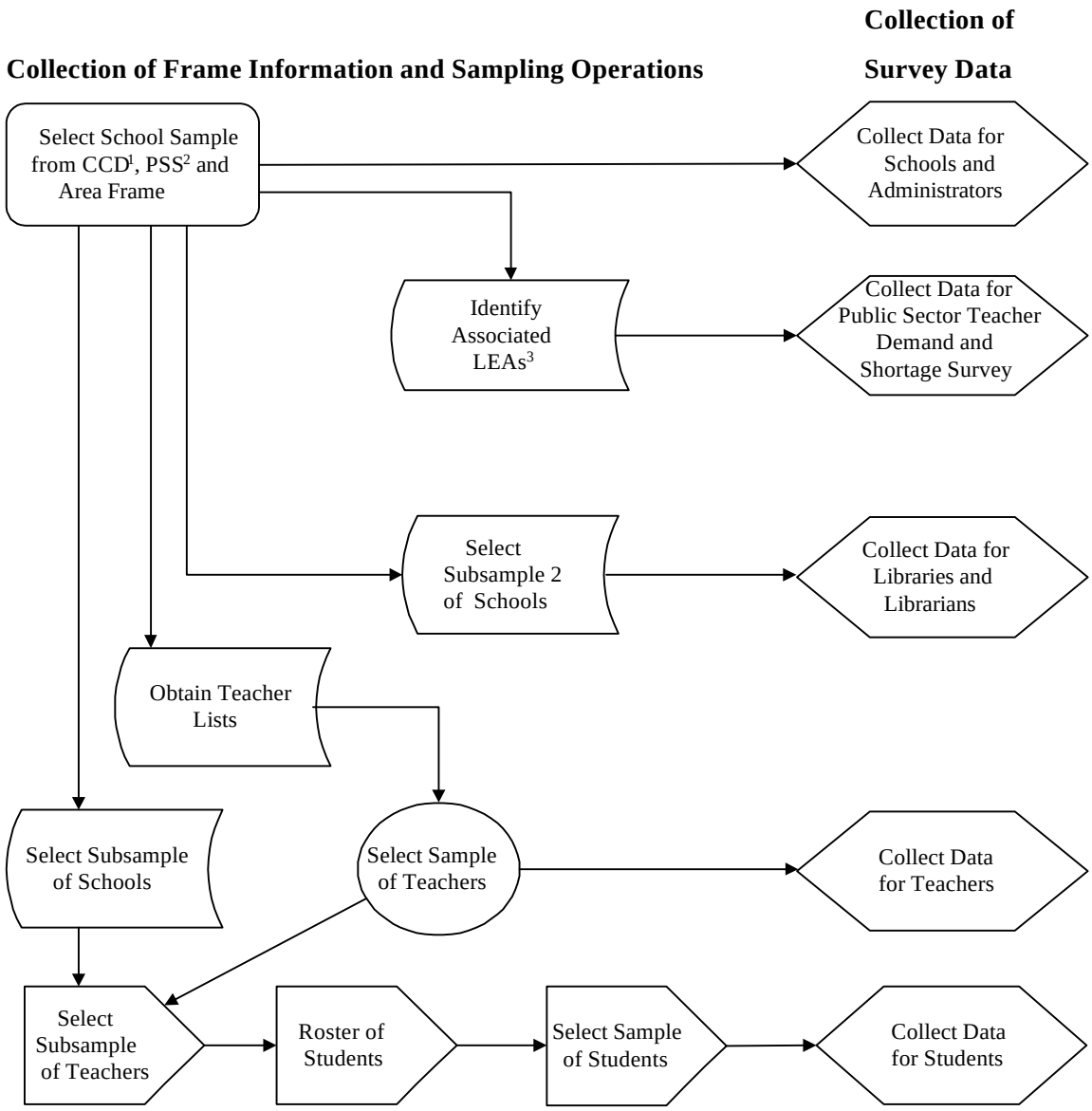
3) A sample of teachers was selected within each selected school. The average teacher sample size per school was approximately five. Each selected teacher received a teacher questionnaire.

4) A subsample of schools for the student sample was selected from the school sample. If possible, a subsample of three teachers per school was selected from the sampled teachers in 3 above, within the student sample schools. If a school had less than three sample teachers, all sample teachers were selected. A sample of two students from each teacher was selected.

5) For public schools, the LEAs associated with the selected schools received a Teacher Demand and Shortage (TDS) questionnaire. In addition, a sample of districts not associated with the selected schools was selected and received the TDS questionnaire. For private schools, the school questionnaire included TDS questions for the school.

[5] This section draws on Abramson, Cole, Fondelier, Jackson, Parmer, and Kaufman (1996),*1993-94 Schools and Staffing Survey: Sample Design and Estimation,* NCES 96-089.

Figure 1.1 -- Sample selection and data collection procedures for the 1993-94 Schools and Staffing Survey.



[1] Common Core of Data (CCD)
[2] Private School Survey (PSS)
[3] Local Education Agency (LEA)

SOURCE: Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

The 1993-94 SASS sample was designed to produce

1. National estimates for public and private schools;
2. State estimates for public schools, libraries, and librarians;
3. State and national estimates for public elementary and secondary schools;
4. National estimates for public combined schools;
5. Detailed association estimates and school level estimates for private schools;
6. Estimates of the change from 1991 to 1994 in school level characteristics;
7. National estimates of public and private student demographic information;
8. National estimates for schools with greater than 19.5 percent Indian enrollment;
9. National estimates for schools, libraries, librarians, and students from schools operated by the Bureau of Indian Affairs (BIA);
10. National estimates for public and private libraries, librarians, and students by school grade and level of urbanicity; and
11. National estimates for private school libraries, librarians, and students by major affiliation (Catholic, other religious, and nonsectarian).

The frame and sampling design for each of the SASS component surveys will be described in detail in chapters 2 and 3.

1.4 Overview of Data Collection Procedures for the 1993-94 SASS [6]

The 1993-94 Schools and Staffing Survey (SASS) was a mail-out/mail-back survey with computer assisted telephone interviewing (CATI) and telephone follow-ups conducted during the 1993-94 school year. All three survey modes were administered by the U.S. Bureau of the Census. Initially, introductory letters were mailed to sampled schools, LEAs, and teachers describing the Schools and Staffing Survey and requesting cooperation. In some cases this letter included a request for a list of individuals (e.g., teachers, students) from which to sample. The LEA introductory letter addressed to "Superintendent" was the only one that informed the recipient that a Census field representative would call in the near future to obtain the name of a contact person; that is, the person to whom the questionnaire should be addressed. The Teacher Demand and Shortage Questionnaire was the only SASS instrument that was addressed to a contact person. Questionnaires were then mailed to each sampled unit. They were to be returned by mail to the data processing division of the U.S. Bureau of the Census in Jeffersonville, Indiana. Reminder postcards were mailed one week after the initial mailing for each type of questionnaire. These postcards were folded and sealed so that the respondent's selection for SASS would remain confidential. Nonresponse follow-up telephone calls were made by Census staff in two centralized locations which used CATI to collect the questionnaire data and/or telephone calls from Census field representatives associated with the twelve Census regional offices. Table 1.4.1 summarizes the specific data collection activities and the time frame in which each occurred.

[6] This section draws from Gruber, Rohr, and Fondelier (1996), *1993-94 Schools and Staffing Survey: Data File User's Manual, Volume I: Survey Documentation,* NCES 96-142.

Table 1.4.1 -- Data collection time schedule.

Activity	Month of activity
Introductory letters mailed to local education agencies (LEAs)	Aug. 1993
Introductory letters and teacher listing forms mailed to schools	Sept. 1993
Census field representatives called LEAs to obtain the name of the person to whom the Teacher Demand and Shortage Questionnaire should be addressed	Sept. 1993
Second mailing of teacher listing forms to schools	Oct. 1993
Initial mailing of questionnaires to LEAs and of questionnaires for principals, libraries, and librarians to schools	Oct. 1993
Telephone follow-up of teacher listing forms not returned by schools	Nov. - Dec. 1993
Second mailing of LEA, principal, library and librarian questionnaires	Nov. - Dec. 1993
Initial mailing of school questionnaires	Dec. 1993
Initial mailing of teacher questionnaires to schools	Dec. 1993 - Feb. 1994
Advance letters mailed to schools selected for student records survey	Dec. 1993
Telephone calls to schools for student records survey sample selection	Jan. - Feb. 1994
Second mailing of school and teacher questionnaires	Jan. - Feb. 1994
Initial mailing of student questionnaires to schools	Mar. 1994
Second mailing of student questionnaires	Apr. 1994
Personal visit sample selection and interviews for student records survey	Mar. - June 1994
Telephone follow-up of mail questionnaire nonrespondents	Jan. - June 1994

SOURCE: Gruber, Rohr, and Fondelier (1996), *1993-94 Schools and Staffing Survey: Data File User's Manual, Volume I: Survey Documentation,* NCES 96-142.

Teacher Demand and Shortage Survey -- In August 1993, a letter describing the Schools and Staffing Survey and requesting cooperation was mailed to each sample local education agency (LEA). This letter also informed the LEA personnel that a Census field representative would call during September to obtain the name of a contact person; that is, the person to whom the LEA questionnaire should be addressed.

In October 1993, Teacher Demand and Shortage Questionnaires were mailed to the sample LEAs. These questionnaires were addressed to the contact person whose name had been provided in September or, if no name had been provided, to "Superintendent." An eligible respondent was any knowledgeable LEA employee; for some LEAs, the data were provided by several staff members.

School and Teacher Surveys. -- In September 1993, introductory letters were sent to the sample schools. Enclosed with each letter was a Teacher Listing Form, on which the school principal (or other school staff) was asked to list all teachers in the school. Included on this listing form were instructions about which types of school staff to include as teachers, as well as a toll-free number to call if assistance were needed. A postage-paid return envelope addressed to the appropriate Bureau of the Census regional office was enclosed.

One week after the listing forms were sent out, a reminder postcard was sent to each school. Three weeks after the postcard, a second copy of the listing form was mailed to each school that had not returned the first listing form (approximately 60 percent of the sample schools).

Four weeks after the second mailing of the listing form, Censusfield representatives began calling schools that had not returned teacher lists. When this telephone follow-up ended in December 1993, approximately 95 percent of public schools, 91 percent of private schools, and 99 percent of Bureau of Indian Affairs (BIA) schools had provided lists of teachers.

In early December, public, private and Indian school questionnaires were mailed to the schools. Although these questionnaires were addressed to "Principal," the respondent could be any knowledgeable school staff member (e.g., vice principal, head teacher, or school secretary).

Because the lists of teachers were obtained from schools and sample teachers were selected over a four-month period, teacher questionnaires were mailed to the schools in three waves, in order to maximize the available time for collecting the questionnaire data. About 67 percent of the questionnaires were mailed in mid-December, 26 percent in early January, and 7 percent in early February. These questionnaires were addressed to the selected sample teachers; the only eligible respondent for each teacher questionnaire was the teacher named on the label.

Student Records Survey. -- In December 1993, letters were mailed to schools selected for the Student Records Survey. This letter explained the purpose of the survey and that information about selected students would be taken from school administrative records, not from the students themselves. The letter also informed the school that a Bureau of the Census employee would call in January or early February and ask for the school's cooperation in selecting a sample of students.

In January, Bureau of the Census staff began calling the schools selected for the Student Records Survey. After selecting a class period for each of three sample teachers, they asked the school to obtain the student rosters for those classes and then selected two students from each class.

For the 288 schools that were unwilling to do the student sample selection by telephone, Census field representatives arranged to visit the school to select the student sample and complete the student questionnaires. These personal visit interviews were conducted between March 21 and June 3, 1994; data were collected for 811 of the 872 students selected for this part of the sample.

Administrator, Library, and Librarian Surveys. --The School Principal Questionnaires, Library Media Center Questionnaires, and Library Media Specialist/Librarian Questionnaires were mailed to the sample schools in October 1993. The principal and library questionnaires were addressed to "Principal" and the librarian form was addressed to "Library Media Specialist/Librarian." (Names of individuals were not used on these questionnaires because available names could have been for persons no longer at the sample school.) An eligible respondent for the principal questionnaire was the current school principal. For the library form, the respondent could have been the school librarian or another school staff member who was familiar with the library. The eligible respondent for the librarian questionnaire was the staff member whose main assignment at the school was to oversee the library.

Reminder postcards and second questionnaire mailing . -- Reminder postcards were mailed one week after the initial mailing for each type of questionnaire. About five weeks after the initial mailing for each type of questionnaire, a second copy of the questionnaire was mailed to each sample unit for which the original form had not been returned. Table 1.4.2 shows the number and percentages of sample units that received second questionnaires.

Table 1.4.2 -- Second mailing of questionnaires.

Sample unit	Number	Percent
LEAs	2,709	48.7
Principals		
Public	4,627	47.1
Private	1,770	52.8
Indian	134	83.7
Schools		
Public	5,920	60.3
Private	2,031	60.6
Indian	100	62.5
Teachers		
Public	36,919	65.9
Private	8,688	75.4
Indian	365	52.4
Students	5,775	67.5
Library media centers		
Public	2,807	55.8
Private	1,687	66.5
Indian	95	59.4
Librarian		
Public	2,549	50.7
Private	1,613	63.6
Indian	89	55.6

SOURCE: Gruber, Rohr, and Fondelier (1996), *1993-94 Schools and Staffing Survey: Data File User's Manual, Volume I: Survey Documentation,* NCES 96-142.

Nonresponse Follow-up Procedures. -- About six weeks after the second mailing for each type of questionnaire, the Bureau of the Census began telephoning sample units that had not returned questionnaires.

For principals, libraries, librarians, public schools, private school teachers, Indian school teachers, and about two-thirds of the nonrespondent public school teachers, these calls were made by Census staff in two centralized locations who used computer-assisted telephone interviewing (CATI) to collect the questionnaire data. These CATI interviewers were provided with an instruction manual and were trained on the survey content and procedures.

LEAs, private schools, Indian schools, about one-third of nonrespondent public school teachers, and schools that had not returned student records questionnaires were called by field representatives (FRs). These FRs completed paper copies of the questionnaires as they collected the

data by telephone. In some cases where the respondent was unwilling to participate in a telephone interview, they attempted to persuade him/her to return a mailed questionnaire. The FRs were experienced survey interviewers who had already been trained in basic interviewing procedures and concepts (e.g., confidentiality and how to persuade reluctant respondents). They were given an instruction manual for SASS and were trained on the content and procedures for the survey by a self-study training package. Table 1.4.3 shows the number and percentages of sample cases that were included in CATI follow-up and the number and percentages that were completed.

Table 1.4.3 -- Computer-assisted telephone interviewing (CATI) follow-up of mail nonresponses.

	Cases in CATI follow-up		Completed* in CATI follow-up	
Sample unit	**Number**	**Percent**	**Number**	**Percent**
Principals				
Public	2,410	24.5	2,072	86.0
Private	1,108	33.0	749	67.6
Indian	53	33.1	47	88.7
Public schools	4,284	43.6	3,111	72.6
Teachers				
Public	13,241	23.6	7,001	52.9
Private	4,629	40.1	2,081	45.0
Indian	253	36.4	151	59.7
Library media centers				
Public	1,940	38.6	1,143	58.9
Private	1,098	43.3	604	55.0
Indian	57	35.6	43	75.4
Librarians				
Public	1,382	27.5	990	71.6
Private	1,004	39.6	354	35.2
Indian	51	31.9	29	56.9

* Only cases where questionnaire data were collected are counted as completed. Cases classified as noninterviews and out-of-scope for the survey during the CATI follow-up are not included.

SOURCE: Gruber, Rohr, and Fondelier (1996), *1993-94 Schools and Staffing Survey: Data File User's Manual, Volume I: Survey Documentation,* NCES 96-142.

Table 1.4.4 shows the number and percentages of sample cases that were called by field representatives associated with twelve Census regional offices and the number and percentages that were completed in this phase of the data collection.

Table 1.4.4 -- Telephone follow-up of mail nonresponses by field representatives.

Sample unit		Cases in follow-up		Completed* in follow-up	
		Number	Percent	Number	Percent
LEAs		590	10.6	574	97.3
Private schools		1,385	41.3	932	67.3
Indian schools		71	44.4	70	98.6
Teachers	Public	6,690	11.9	4,169	62.3
	Private**	698	6.0	161	23.1
	Indian**	31	4.4	17	54.8
Student records		2,704	31.6	1,650	61.0
Principals					
	Public**	158	1.6	55	34.8
	Private**	125	3.7	55	44.0
	Indian**	1	0.6	1	100.0
Public schools		382	3.9	362	94.8
Library media centers					
	Public**	385	7.7	365	94.8
	Private**	159	6.3	125	78.6
	Indian**	9	5.6	8	88.9
Librarians					
	Public**	342	6.8	274	80.1
	Private**	186	7.3	80	43.0
	Indian**	8	5.0	7	87.5

* Only cases where questionnaire data were collected are counted as completed. Cases classified as noninterviews and out-of-scope for the survey during the computer-assisted telephone interviewing (CATI) follow-up are not included.

** For these questionnaires only cases where the CATI interviewers were unable to collect the data (e.g., when the provided telephone number was incorrect) were assigned to field representatives.

SOURCE: Gruber, Rohr, and Fondelier (1996), *1993-94 Schools and Staffing Survey: Data File User's Manual, Volume I: Survey Documentation,* NCES 96-142.

Mail return rates (as a percent of total response) were modest for the 1993-94 SASS school surveys with higher response for the private than the public sector. For example, the mail return rate

for the private school component was 65.3 percent and 55.5 percent for the public school component. Interestingly, the opposite was true in 1990-91 SASS where the public sector mail return rate of 67.3 percent was higher then the private sector mail response rate of 55.7 percent. Nonetheless, in both rounds of the survey, results support the contention that, without follow-up to mail surveys, nonresponse error would be much greater and the validity and reliability of the data considerably reduced. However, because of the substantial amount of telephone follow-up, there is concern about possible bias due to differences in the mode of survey collection.

1.5 Item Response Rates in the 1993-94 SASS

Item nonresponse in SASS can arise when a response is missing for an item in an otherwise completed interview. Item nonresponse may occur because the respondent does not have the information needed for one or more questions, because the respondent refuses to answer specific questions, or because the interviewer or respondent skips the question.

The unweighted item response rates (i.e., the number of sample units responding to an item divided by the number of sample units that participated in the survey) for the 1993-94 SASS components ranged from 50 percent to 100 percent. Table 1.5.1 provides a brief summary of the item response rates. The item response rates in these tables are unweighted, and do not reflect additional response loss due to respondents' refusal to participate in the survey.

Table 1.5.1 -- Unweighted item response rates by questionnaire.

Survey	Range of item response rates	Percent of items with a response rate of 90% or more	Percent of items with a response rate of less than 75%
LEA Survey	67-100%	91%	1%
Principal Survey			
Public	65-100%	92%	4%
Private	55-100%	90%	6%
Indian	72-100%	91%	1%
School Survey			
Public	83-100%	83%	0%
Private	61-100%	77%	3%
Indian	70-100%	84%	1%
Teacher Survey	71-100%	91%	0%
Public	69-100%	89%	1%
Private	70-100%	84%	3%
Indian			
Student Survey			
Public	90-100%	97%	0%
Private	84-100%	97%	0%
Indian	79-100%	88%	0%
Library Media Center Survey			
Public	57-99%	81%	5%
Private	66-99%	80%	4%
Indian	61-100%	82%	1%
Librarian Survey			
Public	61-100%	87%	6%
Private	50-100%	80%	11%
Indian	56-100%	87%	5%

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

Although the percent of items with a response rate of less than 75 percent was minimal in most survey components (6 percent and under in almost all cases), it is important to know which types of items suffer from a significantly lower response rate. Table 1.5.2 shows the items across all the surveys with response rates of less than 75 percent.

Table 1.5.2 -- Items with response rates of less than 75 percent. [*]

Survey	Items
LEA Survey	26c(2)
Principal Survey	
Public	14b(1,1), 14b(2,1), 14b(4,1), 14b(5,1), 14b(7,1), 14b(8,1)
Private	14b(1,1), 14b(2,1), 14b(4,1), 14b(5,1), 14b(8,1), 21a, 21c,
Indian	28b 14b(8,1)
School Survey	
Public	None
Private	31c(2), 31c(5), 31c(6), 31c(7), 31c(8), 31c(9)
Indian	45
Teacher Survey	
Public	41c
Private	39, 51c, 55
Indian	2, 4, 9c, 39, 41c, 53b(3)amount, 55
Student Survey	
Public	None
Private	None
Indian	None
Library Media Center Survey	5a(4), 5b(2), 5b(4), 5c(4), 25
Public	5b(2), 5b(4), 5c(3), 25
Private	25
Indian	
Librarian Survey	
Public	14d(PhD), 18b(5), 18b(6), 18b(7), 18b(8), 18b(9), 18b(10)
Private	14c(ed.spec.), 14d(ed.sp.), 14c(Phd), 14d(PhD), 18b(1), 18b(4), 18b(5), 18b(6), 18b(7), 18b(9), 18b(10), 26d
Indian	18b(4), 18b(6), 18b(7), 18b(8), 18b(9), 18b(10)

[*] The questionnaire wording for these items can be found in Gruber, Rohr, and Fondelier (1996),*1993-94 Schools and Staffing Survey: Data File User's Manual, Volume I: Survey Documentation,*NCES 96-142.

SOURCE: Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation,*NCES 96-089.

In general, high item nonresponse (greater than 25 percent) in the 1993-94 SASS occurred for blocks of questions as described below.

Principal Survey -- The 14b block of questions which related to the "School positions held before becoming a principal and for how many years?" had low response rates across both the public and private sector. This block of questions was preceded by 14a which asked "Did you hold any other school position before you became a principal?" and required a skip if the answer was no.

Private School Survey -- The 31c block of questions pertaining to "how difficult or easy was it to fill vacancies for the school year in certain fields?" had low response rates. This block of questions was preceded by 31a which asked "Were there teaching vacancies in the school for this school year; that is, teaching positions for which teachers were recruited and interviewed?" and required a skip if the answer was no.

Library Media Center Survey -- The 5a, b, c block of questions related to "the number of (books, current serials, video material, other audio-visual material, micro computers, and CD-ROM titles) acquired during the 1992-93 school year?", "items held at the end of 92-93 school year?", and "the expenditures for these materials?" had low response rates across both the public and private sectors. Also, question 25 which asked "during the most recent full week of school how many used the library media center?" suffered low response rates.

Librarian Survey -- Question 14 pertaining to "degrees that you have earned?" had low response rates across both the public and private sector. Also, the 18b block of questions asking "How frequently do you work with classroom teachers in certain subject areas?" had low response rates across both the public and private sector. This question was preceded by 18a which asked "Do you ever work with this school's classroom teachers to plan units of instruction?" and required a skip if the answer was no.

Cognitive research techniques may be warranted to determine the reasons for the low response rate in these questions. Analysis of whether the mode of interview had an effect on the response rates for these items may further shed light on the potential bias in these items.

1.6 Overview of Nonresponse Adjustment Procedures

Sample weighting adjustments for nonresponse are based on "intuitive analytic judgment,"[7] which is used to decide the frame variables that capture variability in schools and, by extension, in nonresponse. For each survey, the sample is partitioned into mutually exclusive and exhaustive cells on auxiliary frame variables and a noninterview adjustment factor is calculated for each cell. This is set equal to the inverse of the adjusted weighted response rate. Under prespecified conditions the cells might be collapsed.[8]

This procedure aims at reducing bias without overly increasing the sampling variance. It rests on the premise that within-cell differences between respondents and nonrespondents are small and that they could be large between cells. The procedure has the advantage of simplicity and familiarity, although cell collapsing rules at times appear cumbersome.[9]

1.7 Unit Response Rates

Response rates in SASS are based on final response rates; no distinction is made between mail and follow-up response. In adjusting for nonresponse, no distinction is made for refusals or non-locatables. The need to make such distinctions may be particularly pertinent given the differences in response rates across the surveys for the different modes of collections and the differences in refusal and non-locatable rates (Chapter 6) across the surveys.

For each SASS component, the response rate was calculated by first excluding all out-of-scope units. The unweighted response rates are defined as the number of in-scope responding questionnaires divided by the number of in-scope sample cases. There are two types of weighted response rates: 1) the weighted unit-level response rate and 2) the overall weighted unit-level response rate. The weighted unit-level response rates are defined in a similar way as the unweighted rates, with the one difference that the weighted instead of the unweighted numbers are used. The overall weighted response rates are defined as the product of the weighted response rates and the rate at which the sampled schools cooperated. Table 1.7.1 provides the unweighted, weighted, and overall response rates for each of the 1993-94 SASS components.

[7] Kasprzyk (1994), "The Schools and Staffing Survey: Research Issues,"*Proceedings of the Section on Survey Research Methods, American Statistical Association.*

[8] When the number of respondents is small or the adjustment factor is large.

[9] Scheuren, Monaco, Zhang, Ikosi, Chang, and Gruber (1996),*An Exploratory Analysis of Response Rates in the 1990-91 Schools and Staffing Survey,* NCES 96-338.

Table 1.7.1 -- Unweighted and weighted response rates compared.

Component	Sample size	Unweighted response rate	Weighted* response rate	Weighted overall** response rate
Public				
TDS***	5,363	93.10	93.90	93.90
Administrator	9,415	96.63	96.60	96.60
School	9,532	91.97	92.27	92.27
Teacher	53,003	88.87	88.22	83.8
Library	4,655	91.13	90.07	90.07
Librarian	4,175	93.49	92.30	92.30
Student	5,577	90.23	91.31	80.3
Private				
Administrator	3,038	90.29	87.62	87.62
School	3,074	84.09	83.19	83.19
Teacher	10,386	80.61	80.18	73.0
Library	2,067	77.75	70.70	70.70
Librarian	1,356	83.92	76.50	76.50
Student	1,371	87.60	88.05	69.6

* Weighted using the inverse of the probability of selection.

** Weighted questionnaire response rate times the rate of cooperation with the sampling of the sample schools at each stage of the selection.

*** Teacher Demand and Shortage Survey (TDS).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (All Questionnaires).

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Chapter 2

SASS Core Components

2.1 Introduction

This chapter analyzes the response rates for the core components of the 1993-94 SASS. The core components of SASS consist of the public and private school, school administrator, and teacher components, as well as the public Teacher Demand and Shortage component. Here the focus is on getting an overall view of the 1993-94 response rates and comparing them with the rates in the 1990-91 SASS.

In this chapter there is one section each covering the school, school administrator, teacher, and the public Teacher Demand and Shortage Components. These sections begin with a brief description of the survey and a comparison of the response rates for the survey component across the last three rounds of SASS. The first three sections covering the school, school administrator, and teacher components are then divided into public and private sections.

The sections are uniform in their approach. First, before the discussion of response rates, a brief description of the sample design and nonresponse adjustment factors for the component is given. Then the overall 1993-94 response rates are presented by geographic region, state (for public components), type of urbanicity, type of school level, and type of school size, and they are compared with the rates for the 1990-91 SASS. The only exception to this format of presentation is for the Teacher Demand and Shortage components where the response rates are computed using metropolitan statistical area, number of schools in the local education agency, and the number of students in the local education agency. These characteristics are used because they are the only ones that overlap with those in the 1990-91 SASS nonresponse analysis.[10] Finally, the results of testing whether there is a significant difference between respondents and nonrespondents for a range of characteristics are provided. Tests were performed using a modified Pearson chi-squared test statistic called Rao-Scott3 (RS3).[11] See Appendix B for a description of the significance tests.

In each section the weighted response rates are used unless otherwise specified. Appendix A contains weighted and unweighted response rate tables for each SASS survey component. These tables contain national, regional, and state/association level response rates for several variables. The sample sizes provided are for eligible (i.e., in-scope) cases only.

[10] Scheuren et al. (1996), *An Exploratory Analysis of Response Rates in the 1990-91 Schools and Staffing Survey*, (NCES 96-338).

[11] Rao and Scott (1981), "The Analysis of Categorical Data from Complex Sample Surveys: Chi-squared Tests for Goodness of Fit and Independence in Two-way Tables," *Journal of the American Statistical Association*, 76: 221-230. Rao and Scott (1984), "On Chi-squared Tests for Multiway Contingency Tables with Cell Proportions Estimated from Survey Data," *The Annals of Statistics*, 12: 46-60.

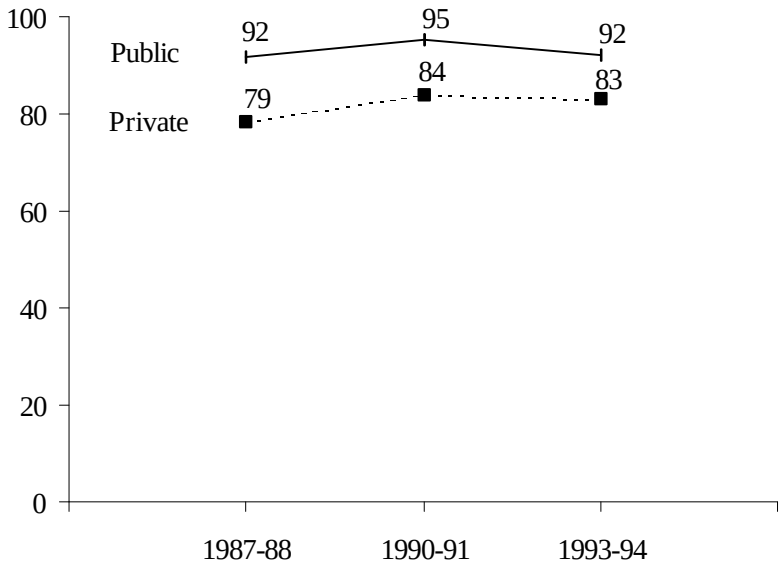
2.2 SASS School Component

The **School Survey** requested information from public, private, and BIA schools about the student enrollment, staffing patterns, teaching vacancies, teacher turnover, types of programs and services offered, length of the school day and school year, high school graduation rates, and college application rates. For private and BIA schools, the questionnaires also collected information on the number of teachers (in full time equivalents, or FTEs), hiring criteria, incentives for staff training, and high school graduation requirements.[12]

Figure 2.2.1 gives a comparison of the weighted response rates for the public and private school components for all three rounds of the SASS survey.

Figure 2.2.1 -- Weighted response rate comparison for the Public and Private School Components: Schools and Staffing Survey 1987-88, 1990-91, and 1993-94.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88, 1990-91, and 1993-94 (Public and Private School Questionnaires).

[12] U.S. Department of Education, National Center for Education Statistics (1994),*SASS and PSS Questionnaires 1993-94*, NCES 94-674.

2.2.1 Public School Component[13]

The source for the public school frame was the 1991-92 Common Core of Data (CCD), which is believed to be the most complete public school listing available. The CCD survey includes an annual census of public schools, obtained from states, with information on school characteristics and size. Before sampling, duplicate schools, schools outside of the United States, schools that only teach prekindergarten, kindergarten or adult education were removed from the sample frame. The public school frame consisted of 82,746 schools.

The CCD defines a **public school** as an institution that provides educational services, has one or more teachers to give instruction, is located in one or more buildings, receives public funds as primary support, has an assigned administrator, and is operated by an education agency. Prison schools and schools operated by the Department of the Defense (DoD) are included in the definition of a public school for SASS, but DoD schools are not included on CCD so are generally not eligible for interview in SASS. A public CCD school is considered out-of-scope for SASS if it does not have any students in grades 1-12 or equivalent ungraded. Schools offering only kindergarten and pre-kindergarten were deleted from the sampling frame before the sample was selected. If a school was determined to be out-of-scope after editing its questionnaire, it was deleted from the data file.

The CCD based frame was then supplemented with a list of schools obtained from the Bureau of Indian Affairs (BIA). This list consisted of 176 BIA schools.

Sample Design

The schools in the public school frame were stratified in three steps. The first step involved stratifying the public schools into four types of schools:

1. BIA (Bureau of Indian Affairs) schools;
2. Native American schools (schools with 19.5 percent or more Native American students);
3. Schools in Delaware, Nevada, and West Virginia; and
4. All other schools (all schools not included in 1, 2, or 3).

The second level of stratification involved stratifying Type 2, 3, and 4 schools even further. Type 2 schools were stratified into eight strata: Arizona, California, Montana, New Mexico, North Dakota, Oklahoma, Washington, and all other states (except Alaska, since most Alaskan schools have high Native American enrollment). Type 3 schools were stratified first by state and then by LEA. Type 4 schools were stratified by state (all states and the District of Columbia except Delaware, Nevada, and West Virginia).

Within each second level stratum the schools were stratified by three grade levels: elementary, secondary, and combined (see Glossary for description).[14]

[13] Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*,NCES 96-089.

All the BIA schools were selected for the 1993-94 SASS sample. There were 176 BIA schools. Within each stratum, all non-BIA schools were systematically selected using a probability proportionate to size algorithm. The measure of size used for the schools on CCD was the square root of the number of teachers in the school as reported on the CCD file. Any school with a measure of size larger than the sampling interval was excluded from the probability sampling operation and included in the sample with certainty. This produced a non-BIA sample of 9,780.[15]

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

For the public school surveys (see Table 2.2.1), the noninterview adjustment cells were: state by school level by school size (enrollment size class) by urbanicity. If the factor was less than 1.5 and there were at least 15 schools in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 2.2.1.

Table 2.2.1 -- Nonresponse adjustment procedures for Public School Survey.

Adjustment cells	Collapsing order
state	school size
by school level	urbanicity
by school size	school level
by urbanicity	

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

[14] Non-regular schools, which include special education, vocational, technical, adult education (if part of an in-scope school) or alternative/continuation grades were classified as combined schools.

[15] Of the total public school sample there were 8,767 responding schools, 765 nonresponding schools, and 248 out-of-scope schools. Of the total public administrator sample there were 9,098 responding administrators, 317 nonresponding administrators, and 374 out-of-scope administrators.

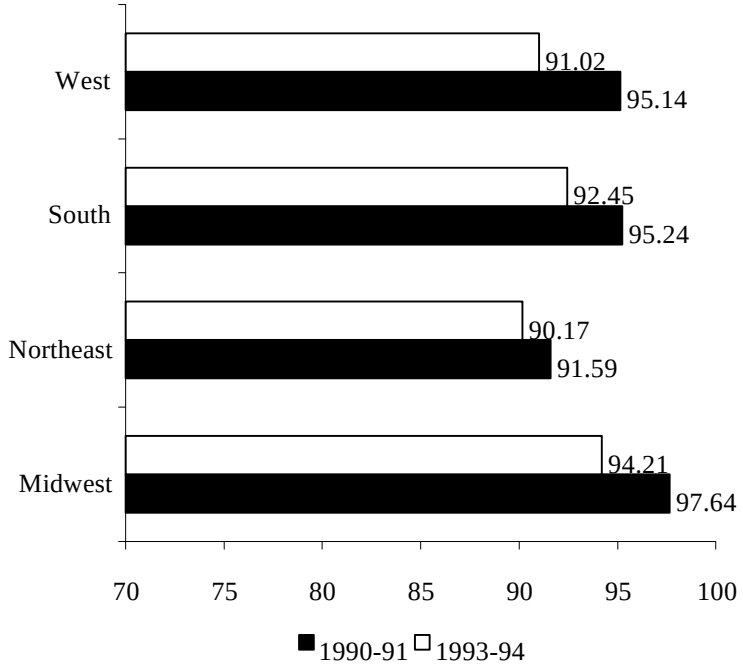
Public School Response Rates: 1993-94 versus 1990-91

The weighted response rate for the 1993-94 SASS Public School Component was 92.27 percent. This rate is over three percentage points lower than that in the 1990-91 SASS (95.30 percent).

Region response rates differed by just over 4 percentage points from a high in the Midwest of 94.21 percent to a low in the Northeast of 90.17 percent (Figure 2.2.2). A similar pattern occurred in the 1990-91 SASS, when the Midwest was also the high (97.64 percent) and the Northeast the low (91.59 percent). However, for every region, the 1993-94 SASS response rates were lower than the 1990-91 SASS and had a smaller range.

Figure 2.2.2 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Public School Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Questionnaires).

As to the location of the best and worst responding**states**, six of the ten best responding states were in the Midwest, followed by the West with two and then the South and the Northeast each with one apiece (Table 2.2.2). This pattern is similar to the 1990-91 SASS, where the Midwest had five of the ten best responding states, the West had three, and the Northeast and the South had one each. For the lowest responding states, the South had five of the bottom ten followed by the Northeast and West with two each and then the Midwest with one. Again this is similar to the 1990-91 SASS,

where the South and the Northeast each had four of the lowest responding states, while the West had the remaining two.

Table 2.2.2 -- Ten highest and lowest weighted response rates by state: Schools and Staffing Survey 1993-94, Public School Component.

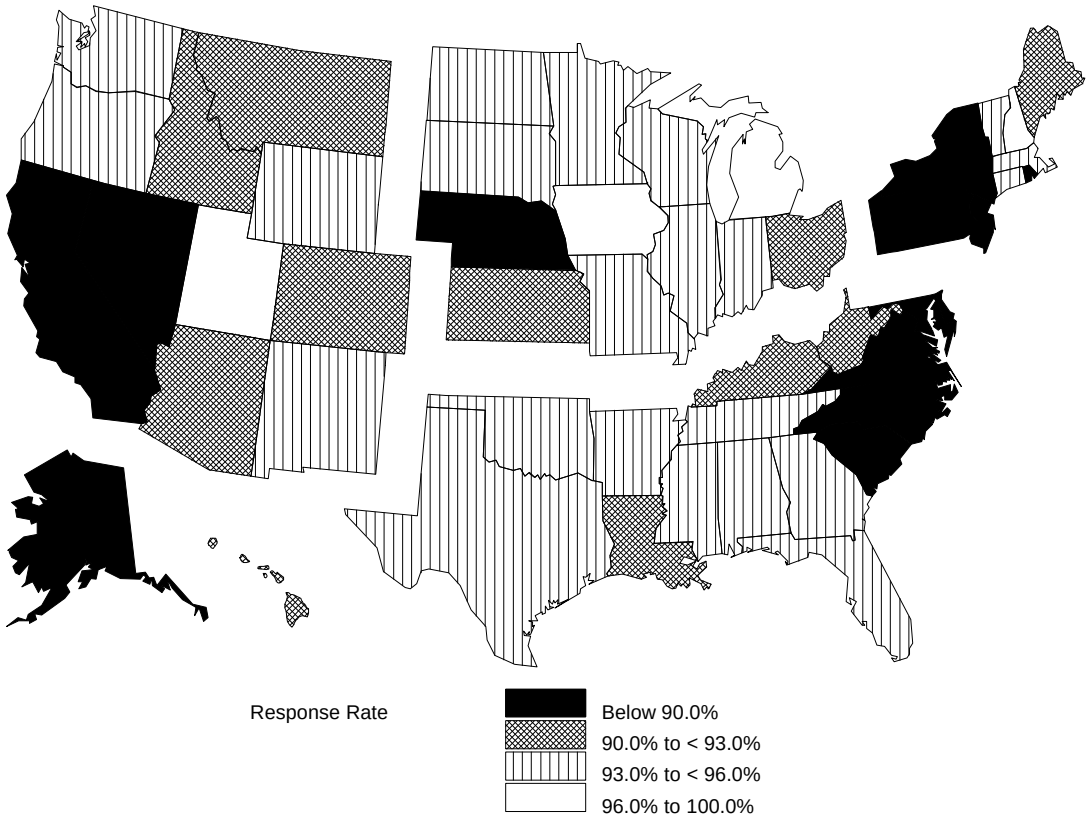
(Response rates in percent)

State	Region	Highest response rate	State	Region	Lowest response rate
Utah	West	98.39	Maryland	South	84.76
New Hampshire	Northeast	97.57	District of Columbia	South	85.51
Michigan	Midwest	96.46	New Jersey	Northeast	87.09
Iowa	Midwest	96.12	South Carolina	South	87.29
South Dakota	Midwest	95.93	Arkansas	South	87.74
Washington	West	95.77	Delaware	South	88.24
North Dakota	Midwest	95.67	California	West	88.25
Missouri	Midwest	95.28	Nevada	West	88.31
Alabama	South	95.05	Pennsylvania	Northeast	88.53
Minnesota	Midwest	94.84	Nebraska	Midwest	89.01

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

Figure 2.2.3 below provides a map showing the 1993-94 state and regional response rate distributions for further comparison purposes with the 1990-91 nonresponse analysis.

Figure 2.2.3 -- Weighted response rates for public schools: Schools and Staffing Survey 1993-94, Public School Component.



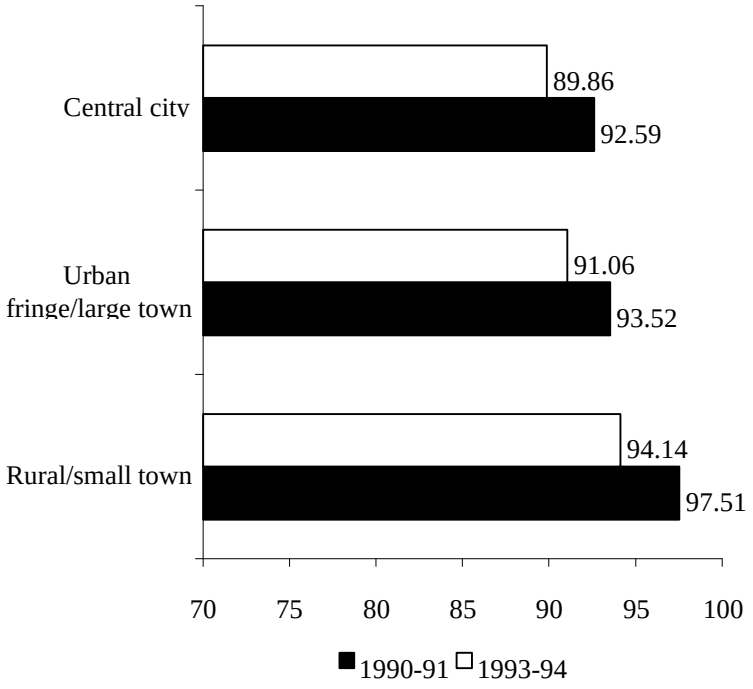
NOTE: The District of Columbia, at 85.51 percent, has not been shown separately.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

For response rates by **urbanicity**, rural/small town schools were the highest at 94.14 percent, followed by urban fringe/large town schools at 91.06 percent and central city schools at 89.86 percent (Figure 2.2.4). This order was exactly the same as the 1990-91 SASS, where rural/small town schools were the highest at 97.51 percent, followed by urban fringe/large town schools at 93.52 percent and central city schools at 92.59 percent. Again, the response rates for urbanicity for the 1993-94 SASS were lower and had a smaller range than the response rates in the 1990-91 SASS.

Figure 2.2.4 -- Urbanicity response rates: SASS 1990-91 versus SASS 1993-94, Public School Component.

(Response rates in percent)

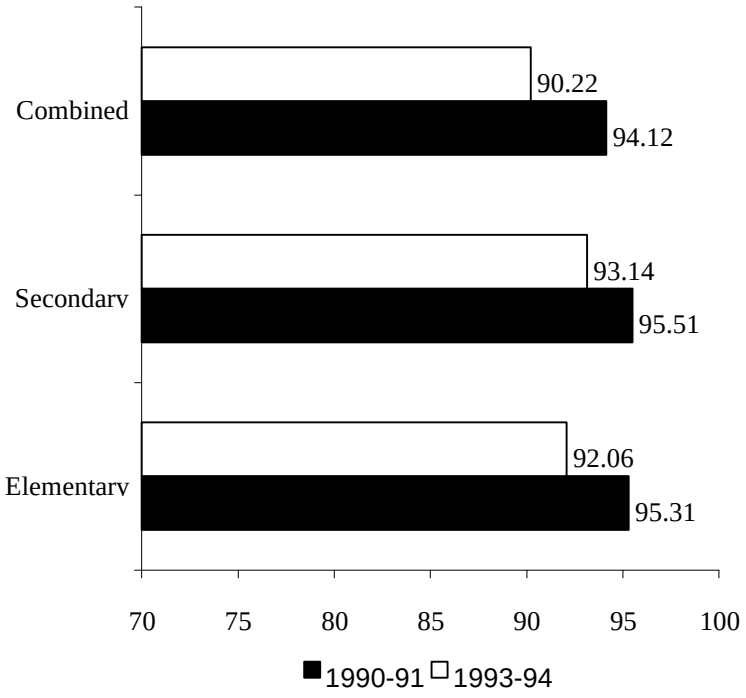


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Questionnaires).

The range of the 1993-94 SASS response rates for **school level** was almost three percentage points. Secondary schools had the highest response rate at 93.14 percent, followed by elementary schools at 92.06 percent and combined schools at 90.22 percent (Figure 2.2.5). These response rates were lower and had a wider range than the school level response rates for the 1990-91 SASS. However, the order of school level response rates in the 1990-91 SASS was the same -- with secondary schools the highest followed by elementary and combined schools with response rates of 95.51 percent, 95.31 percent, and 94.12 percent respectively.

Figure 2.2.5 -- School level response rates: SASS 1990-91 versus SASS 1993-94, Public School Component.

(Response rates in percent)

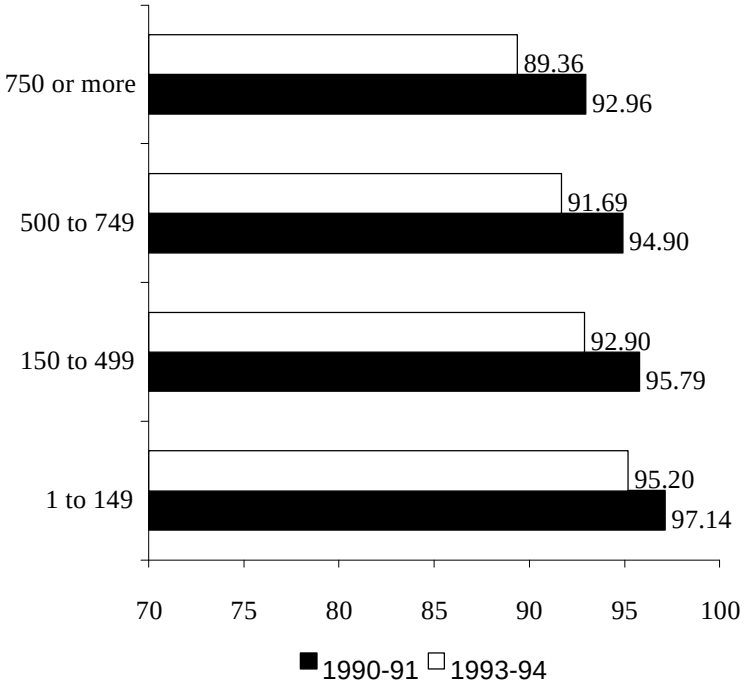


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Questionnaires).

School size response rates had a range of almost six percentage points. Schools with 1 to 149 students had the highest response rate at 95.20 percent, followed by schools with 150 to 499 students at 92.90 percent, schools with 500 to 749 students at 91.69 percent, and schools with 750 or more students at 89.36 percent (Figure 2.2.6). This pattern is exactly the same in the 1990-91 SASS, where response rates tended to decrease as the number of students in the school increased. In the 1990-91 SASS, schools with 1 to 149 students had a response rate of 97.14 percent followed by schools with 150 to 499 students at 95.79 percent, schools with 500 to 749 students at 94.90 percent, and then schools with 750 or more students at 92.96 percent. The 1993-94 SASS had lower school size response rates and a larger range than the 1990-91 SASS.

Figure 2.2.6 -- School size response rates: SASS 1990-91 versus SASS 1993-94, Public School Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Public School Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of nine school characteristics. The nine characteristics[16] were:

1. Minority enrollment
2. Region
3. School sampled in 1990-91 SASS
4. School sampled with certainty
5. School level
6. School size
7. School type
8. Submitted a teacher list
9. Urbanicity

Table 2.2.3 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for schools with a minority enrollment of "less than 5.5%," the response rate was 93.95 percent with a standard error of 0.460 and a sample size of 3,713. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following six had a significant association with response status at the α=0.05 level:

1. Minority enrollment
2. Region
3. School level
4. School size
5. Submitted a teacher list
6. Urbanicity

The association of response status with the remaining three characteristics -- school sampled with certainty, school type, and school sampled in 1990-91 SASS -- were not significant at the α=0.05 level.

[16] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 2.2.3 -- Significance test results: Schools and Staffing Survey 1993-94, Public School Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Minority enrollment			
Less than 5.5%	93.95	0.460	3,713
5.5 - 20.5%	92.22	0.722	1,963
20.5 - 50.5%	91.16	0.775	1,952
Greater than 50.5%	90.17	1.056	1,904
Rao-Scott3 statistic: 11.7876 P-value: **0.0044**			
Region			
Midwest	94.21	0.532	2,195
Northeast	90.17	1.077	1,560
South	92.45	0.603	3,348
West	91.02	0.796	2,429
Rao-Scott3 statistic: 13.3497 P-value: **0.0030**			
School sampled in 1990-91 SASS			
Yes	92.51	0.528	2,852
No	92.17	0.368	6,680
Rao-Scott3 statistic: 0.2666 P-value: 0.6056			
School sampled with certainty			
Yes	91.69	0.852	601
No	92.28	0.300	8,931
Rao-Scott3 statistic: 0.4261 P-value: 0.5139			
School level			
Elementary	92.06	0.368	4,382
Secondary	93.14	0.398	3,944
Combined	90.22	0.940	1,206
Rao-Scott3 statistic: 9.0374 P-value: **0.0100**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

Table 2.2.3 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School size			
1 to 149 students	95.20	0.583	1,223
150 to 499 students	92.90	0.403	3,639
500 to 749 students	91.69	0.867	2,105
750 or more students	89.36	0.794	2,565
Rao-Scott3 statistic: 22.1188 P-value: **0.0000**			
School type			
Non-regular	89.52	1.478	627
Regular	92.39	0.301	8,905
Rao-Scott3 statistic: 3.2393 P-value: 0.0719			
Submitted a teacher list			
Yes	93.48	0.272	9,167
No	61.45	3.461	365
Rao-Scott3 statistic: 61.7963 P-value: **0.0000**			
Urbanicity			
Rural/small town	94.14	0.396	5,006
Urban fringe/large town	91.06	0.960	2,323
Central city	89.86	0.764	2,203
Rao-Scott3 statistic: 17.4277 P-value: **0.0001**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

2.2.2 Private School Component[17]

A **private school** is defined by the Private School Survey (PSS) as a school not in the public system that provides instruction for any of grades 1-12 where the instruction is not given exclusively in a private home. A private school is considered out-of-scope for SASS if it did not have any students in grades 1-12, if it operates in a private home that is used as a family residence, or if it is undetermined whether it operates in a private home and its size is very small (enrollment less than 10 or only one teacher). If a school was determined to be out-of-scope after editing its questionnaire, it was deleted from the data file.

Sample Design

Private schools were selected using a dual frame approach. The primary private school frame was the list frame from the PSS. This frame was then supplemented by an area frame, which was used to find schools missing from the list frame.

The private school list frame was based on the 1991-92 PSS list frame which consisted of approximately 25,051 schools. The 1991-92 PSS list frame was updated for the 1993-94 SASS by asking private school associations to supply lists of their schools. These lists were then matched to the 1991-92 PSS list frame and any school not found on the PSS was added to the frame.

The area frame is designed to represent the private schools missing from the list frame. It is created by searching 123 selected counties for schools not on the list frame. Also the area frame was designed to produce approximately a 50 percent overlap with the 1990-91 SASS. In order to accomplish this the area frame consisted of two sets of primary sampling units (PSUs). The PSUs were 1) a subsample of the 1990-91 SASS area frame sample PSUs (overlap), and 2) sample PSUs selected independently from the 1990-91 SASS (nonoverlap). For the area frame 355 schools were found, 158 of these schools were in counties not selected with certainty. All of these schools were sampled. The remaining 197 schools were in counties selected with certainty, and were combined with the list frame before sampling.

The private school frame had three steps in its stratification. The first step was to stratify the private school list frame by 19 associations (see Glossary). In the second stratification step schools within each association were then stratified by the three school levels described in section 1.3 (elementary, secondary, and combined).[18] In the third stratification step schools were then stratified by the four regions (see Glossary).

Within each stratum, schools were systematically selected using a probability proportionate to size algorithm. The measure of size used was the square root of the 1991-92 PSS number of teachers in the school. Any school with a measure of size larger than the sampling interval was excluded from the probability sampling process and included in the sample with certainty.

[17] The sample design information is from Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation,* NCES 96-089.

[18] Non-regular schools which include special education, vocational, technical, adult education (if part of the in-scope school) or alternative/continuation grades were classified as combined schools.

The total private school in-scope sample size was 3,315, with 3,162 schools from the list frame and the remaining 153 from the area frame.[19]

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

For the private schools (see Table 2.2.4), in the list sample, the first level of grouping is school association membership. Within each association membership, schools were further classified by school level (elementary, secondary, combined) and within each membership association/school level by school size (enrollment size). Additionally, if the sample size was sufficiently large, schools were further classified by urbanicity. If the factor was less than 2.0 and there were at least 15 schools in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 2.2.4.

[19] Of the total private school sample there were 2,585 responding schools, 489 nonresponding schools, and 241 out-of-scope schools. Of the total private administrator sample there were 2,743 responding administrators, 295 nonresponding administrators, and 277 out-of-scope administrators.

Table 2.2.4 -- Nonresponse adjustment procedures for Private School and Administrator Surveys.

Private list frame	Private area frame
Adjustment cells:	Adjustment cells:
association	3 level typology
by school level	by school level
by school size	by school size
by urbanicity*	
Collapsing order:	Collapsing order:
school size	school size
urbanicity*	school level
school level	3 level typology
association	

* When sample sizes are sufficiently large.

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation,* NCES 96-089.

Private School Response Rates: 1993-94 versus 1990-91

The in-scope sample size for the 1993-94 SASS Private School Component was 3,074 with an overall response rate of 83.19 percent. This rate is slightly lower than that in the 1990-91 SASS (83.95 percent).

The greatest difference in **stratum** response rates is almost 27 percentage points with Christian Schools International the lowest at 69.17 percent and the Association of Military Colleges and Schools of the U.S. the highest at 96.30 percent (Table 2.2.5). There are some similarities here with the 1990-91 SASS, where Christian Schools International also had the lowest response rate at 59.03 percent, while the Association of Military Colleges and Schools of the U.S. had the eighth highest rate (90.91 percent). The range of stratum response rates, at just under 27 percentage points, was also narrower than the range for the 1990-91 SASS, which was over 38 percentage points.

Table 2.2.5 -- Weighted stratum response rates: Schools and Staffing Survey 1993-94, Private School Component.

(Response rates in percent)

Association	Response rate
Association of Military Colleges and Schools of U.S.	96.30
Evangelical Lutheran Church in America	94.59
Lutheran Church - Missouri Synod	90.52
Evangelical Lutheran Church - Wisconsin	89.63
National Catholic Ed. Association, Jesuit Secondary	89.21
General Conference of Seventh-Day Adventists	89.12
National Association of Private Schools for Exceptional Children	88.47
Other Lutheran	88.14
Solomon Schechter Day Schools	88.00
American Montessori Society, other Montessori	83.34
National Association of Independent Schools	82.43
National Independent Private Schools Association	80.15
Friends Council on Education	80.00
All Else*	79.11
National Society of Hebrew Day Schools	78.68
National Association of Episcopal Schools	77.88
American Association of Christian Schools	72.76
Other Jewish	71.77
Area frame	71.35
Christian Schools International	69.17

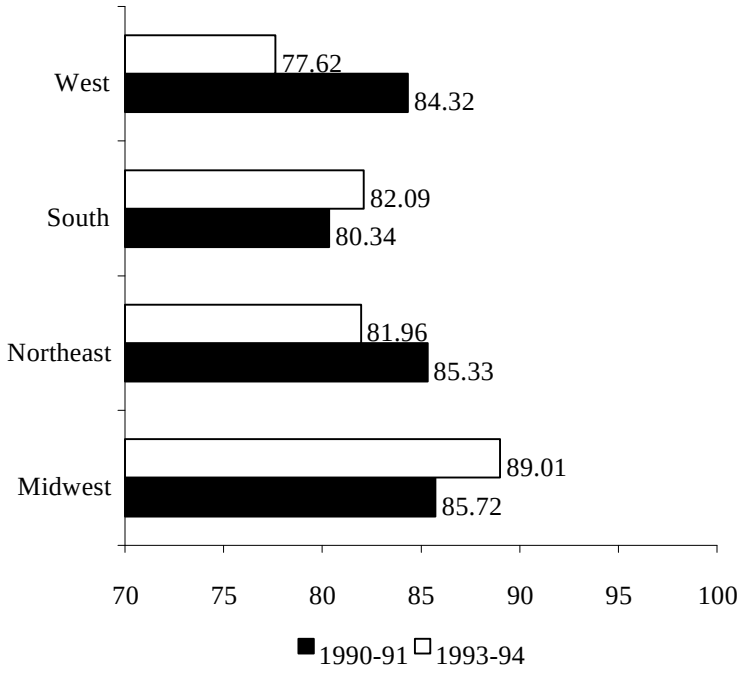
* All Else – a member of any other association specified in the Private School Survey or affiliated with a group not listed above or not a member of any association.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Questionnaires).

Region response rates differed by almost 12 percentage points from a high in the Midwest of 89.01 percent to a low in the West of 77.62 percent (Figure 2.2.7). In the 1990-91 SASS, the Midwest was also the high and the South the low at 85.72 and 80.34 percent, respectively.

Figure 2.2.7 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Private School Component.

(Response rates in percent)

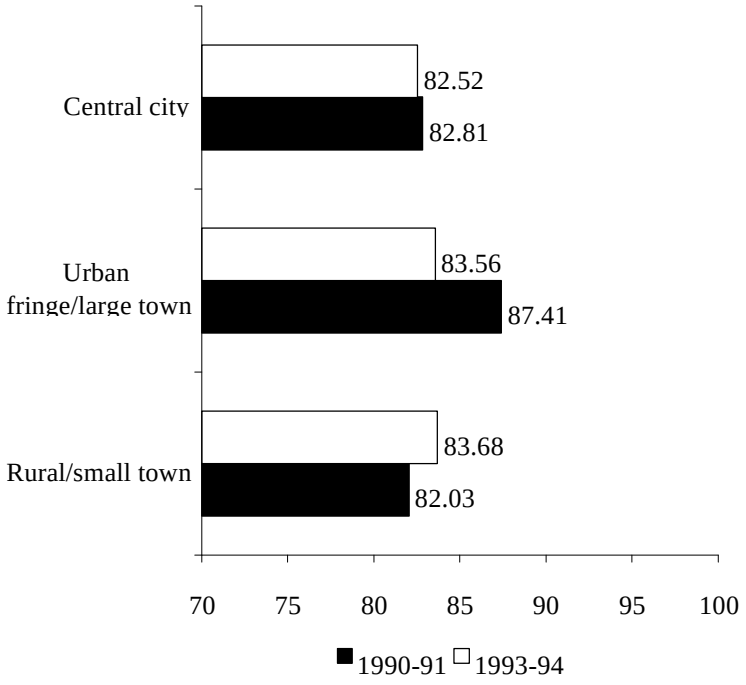


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Questionnaires).

For response rates by **urbanicity**, rural/small town schools were the highest at 83.68 percent, closely followed by urban fringe/large town schools at 83.56 percent and central city schools at 82.52 percent (Figure 2.2.8). This order is different from the 1990-91 SASS, where urban fringe/large town schools were the highest at 87.41 percent, followed by central city schools at 82.81 percent and rural/small town schools at 82.03 percent.

Figure 2.2.8 -- Urbanicity response rates: SASS 1990-91 versus SASS 1993-94, Private School Component.

(Response rates in percent)

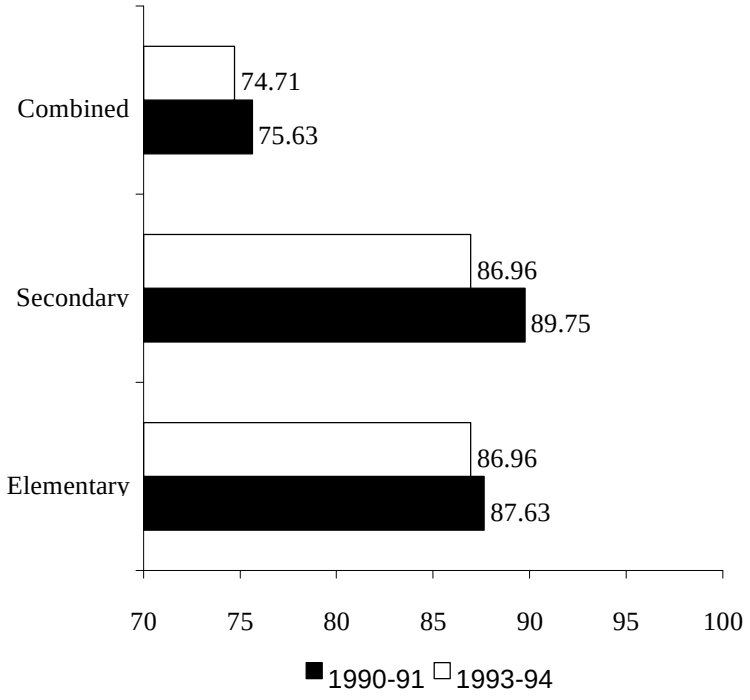


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Questionnaires).

The range of response rates for **school level** was just over 12 percentage points. Elementary and secondary schools had the highest response rates at 86.96 percent, followed by combined schools at 74.71 percent (Figure 2.2.9). In the 1990-91 SASS secondary schools had the highest response rate at 89.75 percent, followed by elementary schools (87.63 percent) and then combined schools (75.63 percent).

Figure 2.2.9 -- School level response rates: SASS 1990-91 versus SASS 1993-94, Private School Component.

(Response rates in percent)

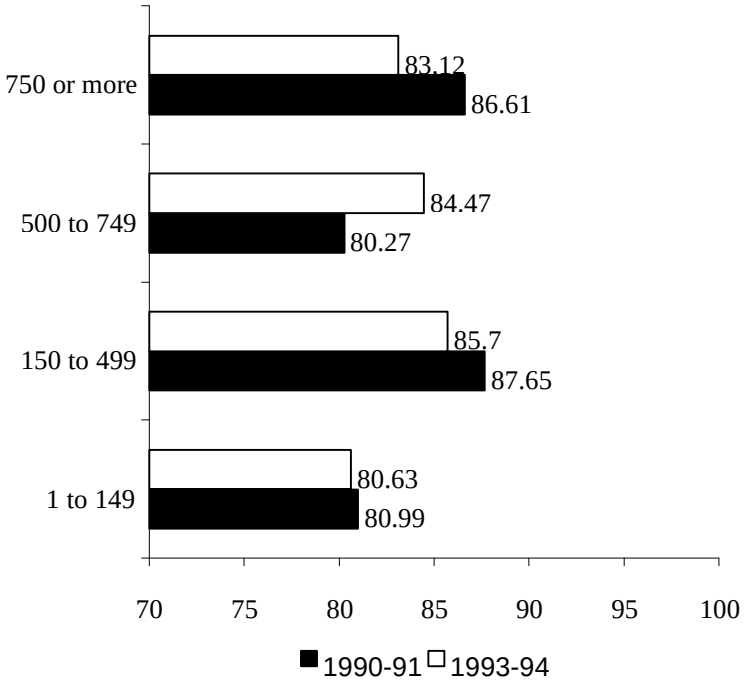


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Questionnaires).

School size response rates had a range of about five percentage points. Schools with 150 to 499 students had the highest response rate at 85.70 percent, followed by schools with 500 to 749 students at 84.47 percent, schools with 750 or more students at 83.12 percent, and schools with 1 to 149 students at 80.63 percent (Figure 2.2.10). This order is some what similar to the 1990-91 SASS, where schools with 150 to 499 students had the highest response rate (87.65 percent), followed by schools with 750 or more students (86.61 percent), schools with 1 to 149 students (80.99 percent), schools with 500 to 749 students (80.27 percent).

Figure 2.2.10 -- School size response rates: SASS 1990-91 versus SASS 1993-94, Private School Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Private School Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of six school characteristics. The six characteristics[20] were:

1. Urbanicity
2. Region
3. School level
4. School size
5. Sampled in the 1990-91 SASS
6. 1991-92 PSS[21] status

Table 2.2.6 gives response rates, standard errors, and sample sizes for the different levels of the variables examined. For instance, for "rural/small town" schools, the response rate was 83.68 percent with a standard error of 1.678 and a sample size of 634. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following five had a significant association with response status at the α=0.05 level:

1. Region
2. School level
3. School size
4. Sampled in the 1990-91 SASS
5. 1991-92 PSS status

The association of response status with the remaining characteristic -- urbanicity -- was not significant at the α=0.05 level.

[20] The definitions for these characteristics can be found in the Glossary at the end of this report.
[21] Private School Survey (PSS)

Table 2.2.6 -- Significance test results: Schools and Staffing Survey 1993-94, Private School Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	83.68	1.678	634
Urban fringe/large town	83.56	1.042	1,168
Central city	82.52	1.209	1,272
Rao-Scott3 statistic: 0.5105	P-value: 0.7466		
Region			
Midwest	89.01	1.232	849
Northeast	81.96	1.372	852
South	82.09	1.785	829
West	77.62	2.544	544
Rao-Scott3 statistic: 16.6586	P-value: **0.0004**		
School level			
Elementary	86.96	0.832	1,506
Secondary	86.96	1.718	554
Combined	74.71	1.713	1,014
Rao-Scott3 statistic: 57.5754	P-value: **0.0000**		
School size			
1 to 149 students	80.63	1.572	1,116
150 to 499 students	85.70	0.967	1,487
500 to 749 students	84.47	1.933	273
750 or more students	83.12	2.428	198
Rao-Scott3 statistic: 8.5475	P-value: **0.0111**		
School sampled in 1990-91 SASS			
Yes	87.73	1.158	776
No	82.24	0.952	2,298
Rao-Scott3 statistic: 13.7503	P-value: **0.0002**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Questionnaires).

Table 2.2.6 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Private School Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
1991-92 PSS* status			
Respondent	85.11	0.735	2,871
Nonrespondent	44.14	7.763	61
Not in 1991-92 PSS	62.59	5.947	142
Rao-Scott3 statistic: 29.3155	P-value: **0.0000**		

*Private School Survey (PSS)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Questionnaires).

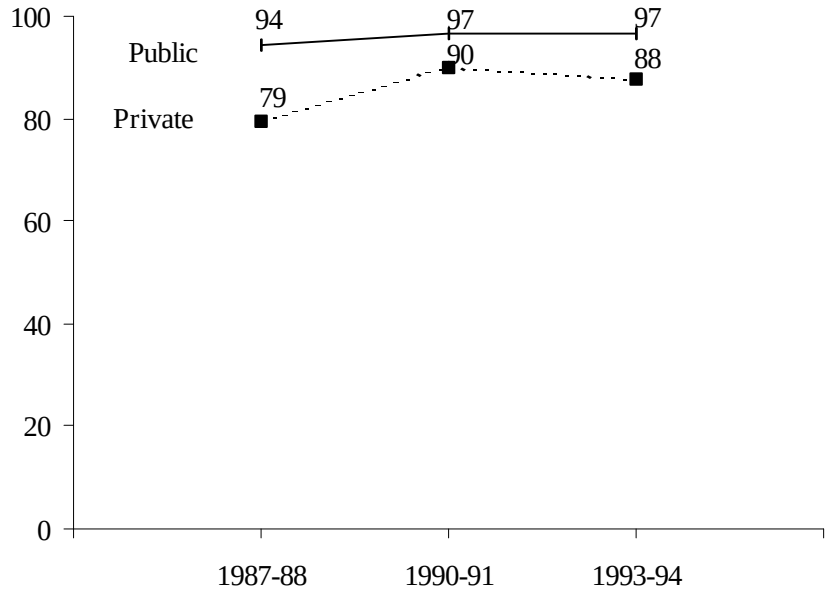
2.3 SASS Administrator Component

The **School Principal Survey** obtained information about the age, sex, race/ethnicity, and perceptions of school principals or school heads. Public schools, private schools, and BIA schools received different versions of this questionnaire.[22]

Figure 2.3.1 gives a comparison of the weighted response rates for the public and private administrator components for all three rounds of the SASS survey.

Figure 2.3.1 -- Weighted response rate comparison for the Public and Private Administrator Components: Schools and Staffing Survey 1987-88, 1990-91, and 1993-94.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88, 1990-91, and 1993-94 (Public and Private Administrator Questionnaires).

[22] U.S. Department of Education, National Center for Education Statistics (1994),*SASS and PSS Questionnaires 1993-94*, NCES 94-674l

A school **administrator** questionnaire was sent to the person who is primarily responsible for overseeing the administrative operations and actions of the school. A school administrator sample case was considered out-of-scope if the school did not have an administrator. Also, if a sample administrator's school is considered out-of-scope, the administrator is automatically classified as out-of-scope.

2.3.1 Public Administrator Component

Sample Design

The sample design for the public administrator component is the same as that used in the public school component (Section 2.2.1).

Nonresponse Adjustment Factors

The nonresponse adjustment cells for the public administrator component are the same as those used in the public school component (Section 2.2.1).

Public School Administrator Response Rates: 1993-94 versus 1990-91

The in-scope sample size for the 1993-94 SASS Public School Administrator Component was 9,415 with an overall response rate of 96.60 percent. This rate is almost exactly that in the 1990-91 SASS (96.68 percent).

The greatest difference in **state** level response rates is less than 15 percentage points with the District of Columbia the lowest at 85.83 percent and New Hampshire and West Virginia the highest at 100.00 percent (Table 2.3.1). There are not many similarities here with the 1990-91 SASS, where Maryland had the lowest response rate at 82.35 percent and the District of Columbia was the second lowest at 88.88 percent, while Idaho and Indiana had the highest rates (100.00 percent). However, it is interesting that New Hampshire which is the best responding state here was not even in the top ten in the 1990-91 SASS. The range of state level response rates, at just under 15 percentage points, was smaller than the range for the 1990-91 SASS, which was almost 18 percentage points.

Table 2.3.1 -- Ten highest and lowest weighted response rates by state: Schools and Staffing Survey 1993-94, Public School Administrator Component.

(Response rates in percent)

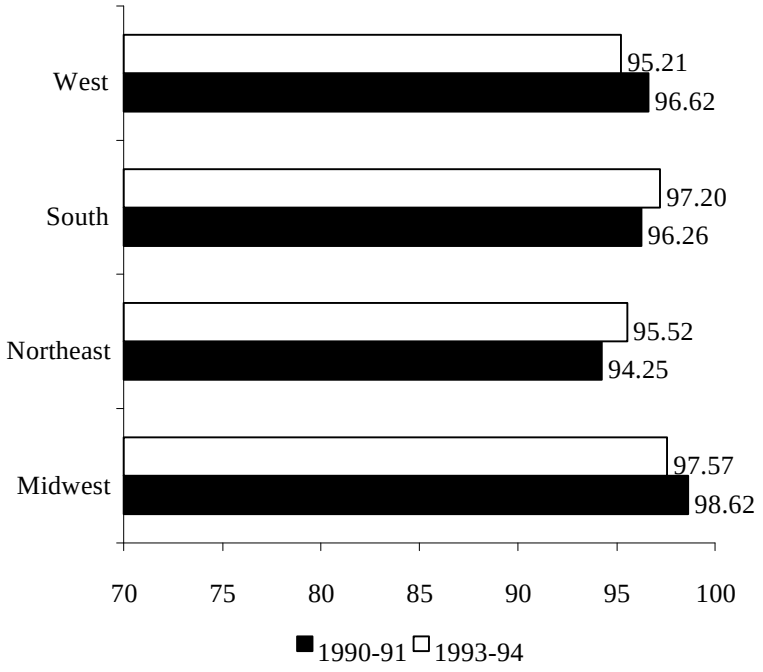
Highest			Lowest		
State	**Region**	**response rate**	**State**	**Region**	**response rate**
New Hampshire	Northeast	100.00	District of Columbia	South	85.83
West Virginia	South	100.00	Colorado	West	89.37
Alabama	South	99.58	New York	Northeast	92.79
Georgia	South	99.55	Maine	Northeast	93.34
Utah	West	99.48	Kansas	Midwest	93.52
Massachusetts	Northeast	99.41	Nevada	West	93.72
Wisconsin	Midwest	99.39	Rhode Island	Northeast	93.93
Idaho	West	99.23	Vermont	Northeast	94.09
Iowa	Midwest	99.07	California	West	94.16
Minnesota	Midwest	98.92	Kentucky	South	94.66

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Component Questionnaires).

Region response rates differed by less than 3 percentage points from a high in the Midwest of 97.57 percent to a low in the West of 95.21 percent (Figure 2.3.2). In the 1990-91 SASS, the Midwest was also the high, while the Northeast was the low at 98.62 and 94.25 percent respectively. The West was the second highest in 1990-91 (96.62 percent). So the 1993-94 SASS had slight variations in regional response rates relative to 1990-91, with a smaller range in 1993-94.

Figure 2.3.2 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Public School Administrator Component.

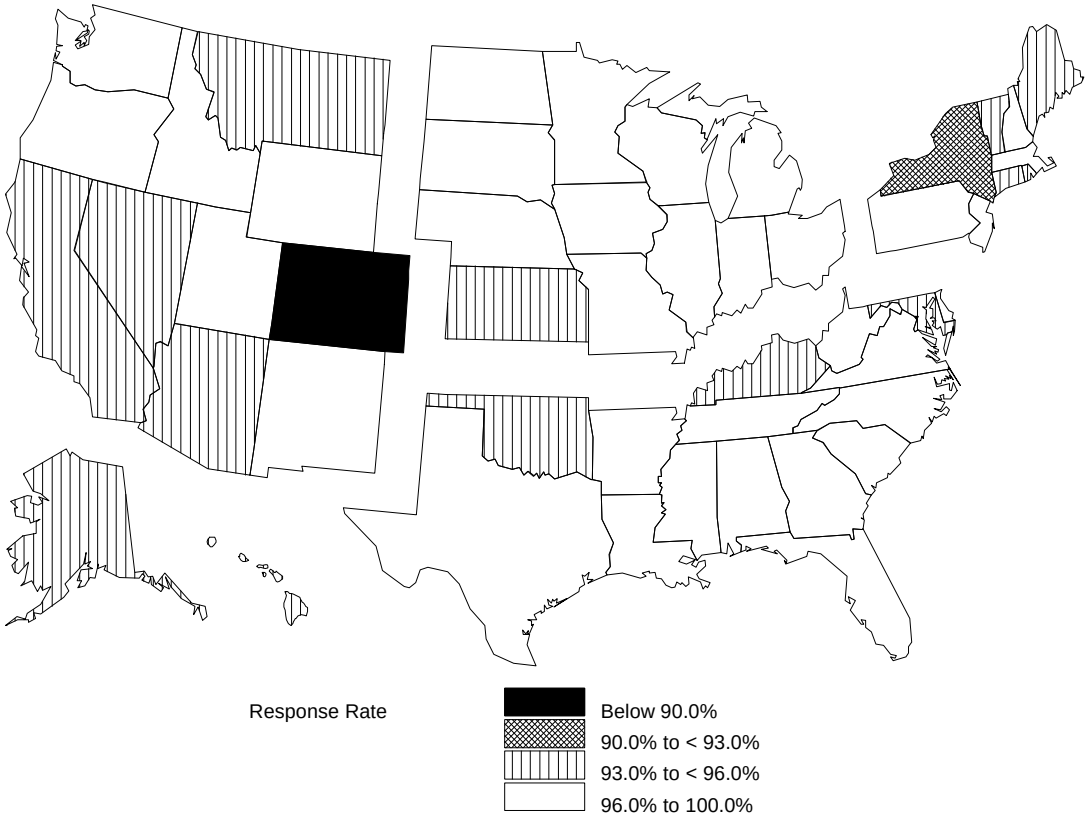
(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Administrator Questionnaires).

As to the location of the 10 best responding **states**, the Midwest and the South each had three of the 10 best responding states, followed by the West and Northeast with two each (Table 2.3.1). Notice, in fact, that only one state in the Midwest had a response rate under 96 percent, compared with three states and the District of Columbia in the South, five in the Northeast, and seven in the West. This is different from the 1990-91 SASS, where the Midwest and West each had four of the ten best responding states, and the South had two. For the lowest responding states, four of the 10 worst responding States were in the Northeast, followed by the West with three, the South with 2, and the Midwest with one. This is not at all similar to the 1990-91 SASS, where the South had eight of the bottom ten states followed by the Northeast and West with one each.

Figure 2.3.3 -- Weighted response rates for Public Schools: Schools and Staffing Survey 1993-94, Public School Administrator Component.



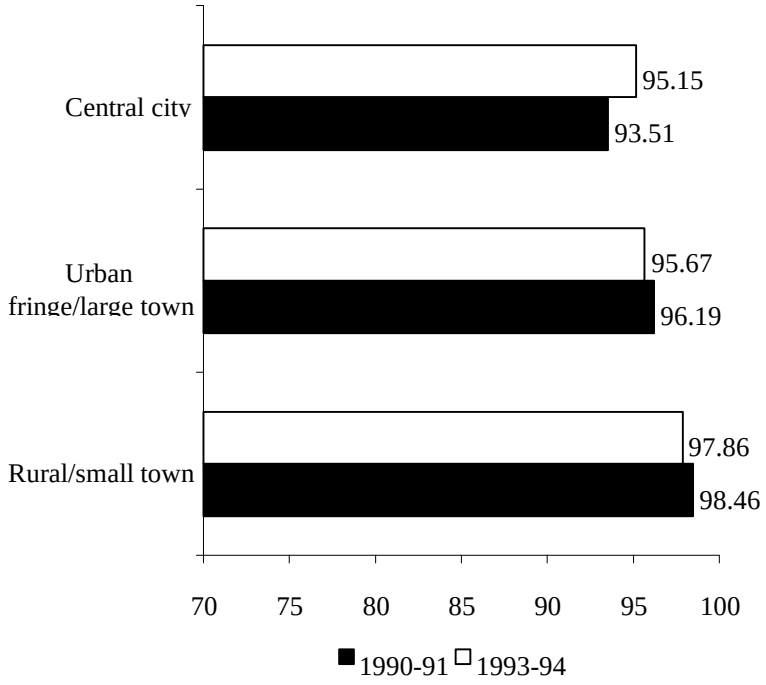
NOTE: The District of Columbia, at 85.83 percent, has not been shown separately.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Questionnaires).

For response rates by **urbanicity**, rural/small town schools were the highest at 97.86 percent, followed by urban fringe/large town schools at 95.67 percent and central city school administrators at 95.15 percent (Figure 2.3.4). This order was exactly the same as the 1990-91 SASS, where rural/small town school administrators were the highest at 98.46 percent, followed by urban fringe/large town school administrators at 96.19 percent and central city school administrators at 93.51 percent. Again, the response rates for urbanicity for the 1993-94 SASS had slight variations in response rates relative to 1990-91, with a smaller range in 1993-94.

Figure 2.3.4 -- Urbanicity response rates: SASS 1990-91 versus SASS 1993-94, Public School Administrator Component.

(Response rates in percent)

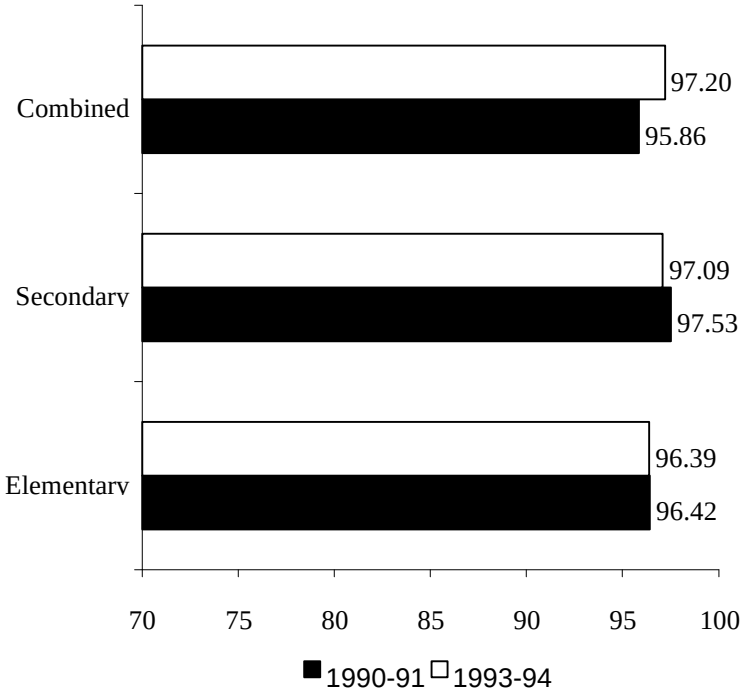


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Administrator Questionnaires).

The range of response rates for **school level** was less than one percent. Combined school administrators had the highest response rate at 97.20 percent, followed closely by secondary school administrators at 97.09 percent and elementary school administrators at 96.39 percent (Figure 2.3.5). These response rates were not much different than the school level response rates for the 1990-91 SASS; however, the 1993-94 SASS had a narrower range. In addition, the order of school level response rates in the 1990-91 SASS was different with secondary school administrators the highest followed by elementary and combined school administrators with response rates of 97.53 percent, 96.42 percent, and 95.86 percent respectively.

Figure 2.3.5 -- School level response rates: SASS 1990-91 versus SASS 1993-94, Public School Administrator Component.

(Response rates in percent)

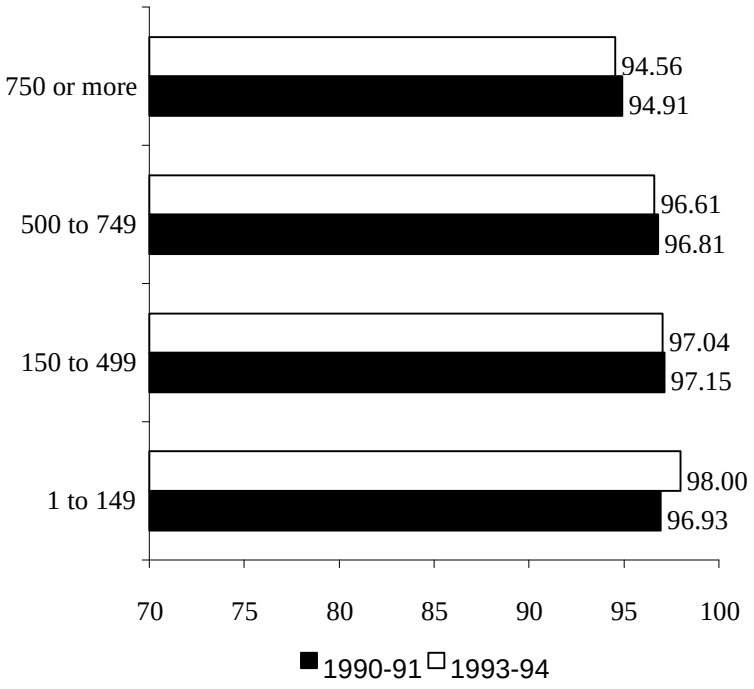


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Administrator Questionnaires).

School size response rates had a range of less than four percentage points. Administrators of schools with 1 to 149 students had the highest response rate at 98.00 percent, followed by administrators of schools with 150 to 499 students at 97.04 percent, administrators of schools with 500 to 749 students at 96.61 percent, and administrators of schools with 750 or more students at 94.56 percent (Figure 2.3.6). This pattern is slightly different from the 1990-91 SASS, where administrators of schools with 150 to 499 students had the highest response rate at 97.15 percent followed by administrators of schools with 1 to 149 students at 96.93 percent, administrators of schools with 500 to 749 students at 96.81 percent, and then administrators of schools with 750 or more students at 94.91 percent.

Figure 2.3.6 -- School size response rates: SASS 1990-91 versus SASS 1993-94, Public School Administrator Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Administrator Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Public School Administrator Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of nine school characteristics. The nine characteristics[23] were:

1. Minority enrollment
2. Region
3. School sampled in 1990-91 SASS
4. School sampled with certainty
5. School level
6. School size
7. School type
8. Submitted a teacher list
9. Urbanicity

Table 2.3.2 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for schools with a minority enrollment of "less than 5.5%," the response rate was 97.63 percent with a standard error of 0.338 and a sample size of 3,657. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following six had a significant association with response status at the α=0.05 level:

1. Urbanicity
2. Region
3. Minority enrollment
4. School size
5. School type
6. Submitted a teacher list

The association of response status with the remaining three characteristics -- school sampled with certainty, school level, and school sampled in 1990-91 SASS -- were not significant at the α=0.05 level.

[23] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 2.3.2 -- Significance test results: Schools and Staffing Survey 1993-94, Public School Administrator Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled with certainty			
Yes	96.63	0.507	594
No	96.60	0.235	8,821
Rao-Scott3 statistic: 0.0024 P-value: 0.9612			
Urbanicity			
Rural/small town	97.86	0.252	4,939
Urban fringe/large town	95.67	0.726	2,301
Central city	95.15	0.649	2,175
Rao-Scott3 statistic: 12.1938 P-value: **0.0017**			
Region			
Midwest	97.57	0.406	2,156
Northeast	95.52	0.811	1,541
South	97.20	0.345	3,323
West	95.21	0.858	2,395
Rao-Scott3 statistic: 6.9120 P-value: **0.0339**			
Minority enrollment			
Less than 5.5%	97.63	0.338	3,657
5.5 - 20.5%	96.78	0.531	1,946
20.5 - 50.5%	96.66	0.522	1,932
Greater than 50.5%	94.43	0.719	1,880
Rao-Scott3 statistic: 18.8881 P-value: **0.0003**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Questionnaires).

Table 2.3.2 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Administrator Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School level			
Elementary	96.39	0.329	4,336
Secondary	97.09	0.190	3,914
Combined	97.20	0.329	1,165
Rao-Scott3 statistic: 3.8380 P-value: 0.0740			
School size			
1 to 149 students	98.00	0.393	1,148
150 to 499 students	97.04	0.364	3,613
500 to 749 students	96.61	0.606	2,094
750 or more students	94.56	0.729	2,560
Rao-Scott3 statistic: 11.4151 P-value: **0.0046**			
School type			
Non-regular	97.86	0.386	593
Regular	96.55	0.244	8,822
Rao-Scott3 statistic: 6.7629 P-value: **0.0093**			
School sampled in 1990-91 SASS			
Yes	96.49	0.448	2,817
No	96.65	0.268	6,598
Rao-Scott3 statistic: 0.0867 P-value: 0.7684			
Submitted a teacher list			
Yes	97.36	0.251	9,063
No	77.13	3.277	352
Rao-Scott3 statistic: 37.3820 P-value: **0.0000**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Questionnaires).

2.3.2 Private Administrator Component

Sample Design

The sample design for the public administrator component is the same as that used in the public school component (Section 2.2.2).

Nonresponse Adjustment Factors

The nonresponse adjustment cells for the public administrator component are the same as those used in the public school component (Section 2.2.2).

Private School Administrator Response Rates: 1993-94 versus 1990-91

The in-scope sample size for the 1993-94 SASS Private School Administrator Component was 3,038 with an overall response rate of 87.62 percent. This rate is almost three percentage points lower than that in the 1990-91 SASS (90.05 percent).

The greatest difference in **stratum** response rates is almost 27 percentage points with Christian Schools International the lowest at 73.47 percent and Lutheran Church - Missouri Synod the highest at 100.00 percent (Table 2.3.3). There are some similarities here with the 1990-91 SASS, where Christian Schools International had the second lowest response rate at 73.38 percent, while Lutheran Church - Missouri Synod had the fourth highest rate (97.34 percent). For the 1990-91 SASS, the highest response rate was for the Evangelical Lutheran Church in America (98.85 percent), while Other Jewish was the lowest (72.39 percent).

Table 2.3.3 -- Weighted stratum response rates: Schools and Staffing Survey 1993-94, Private School Administrator Component

(Response rates in percent)

Association	Response rate
Lutheran Church - Missouri Synod	100.00
Friends Council on Education	98.61
Other Lutheran	98.28
Evangelical Lutheran Church in America	98.25
Solomon Schechter Day Schools	98.00
National Association of Private Schools for Exceptional Children	96.71
Evangelical Lutheran Church - Wisconsin	94.83
General Conference of Seventh-Day Adventists	93.23
National Catholic Ed. Association, Jesuit Secondary	92.85
National Association of Independent Schools	90.23
American Montessori Society, other Montessori	89.85
Association of Military Colleges and Schools of U.S.	88.89
National Society of Hebrew Day Schools	85.88
National Association of Episcopal Schools	85.77
National Independent Private Schools Association	83.79
American Association of Christian Schools	81.90
All Else*	81.55
Other Jewish	77.57
Area Frame	75.09
Christian Schools International	73.47

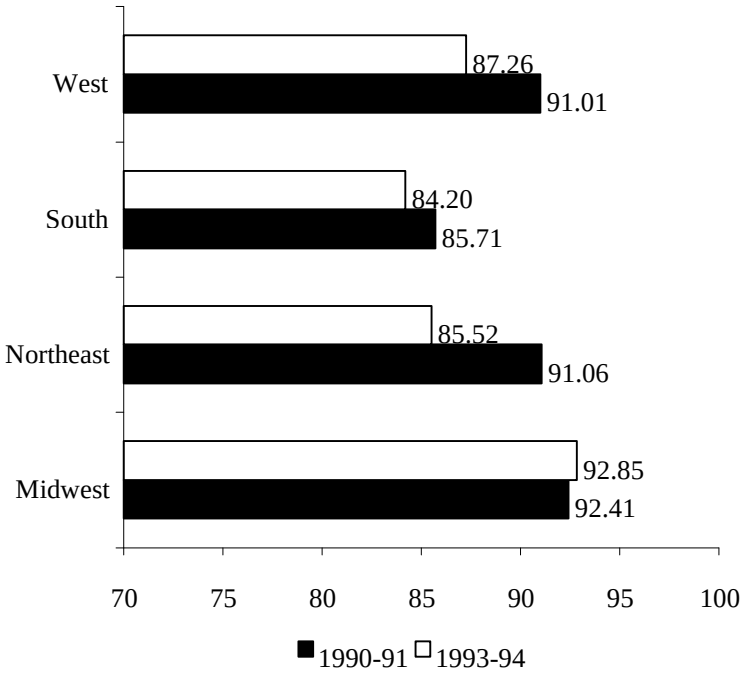
*All Else -- a member of any other association specified in the Private School Survey or affiliated with a group not listed above or not a member of any association.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Administrator Questionnaires).

Region response rates differed by almost nine percentage points from a high in the Midwest of 92.85 percent to a low in the South of 84.20 percent (Figure 2.3.7). In the 1990-91 SASS, the Midwest was also the high and the South was the low at 92.41 and 85.71 percent respectively.

Figure 2.3.7 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Private School Administrator Component.

(Response rates in percent)

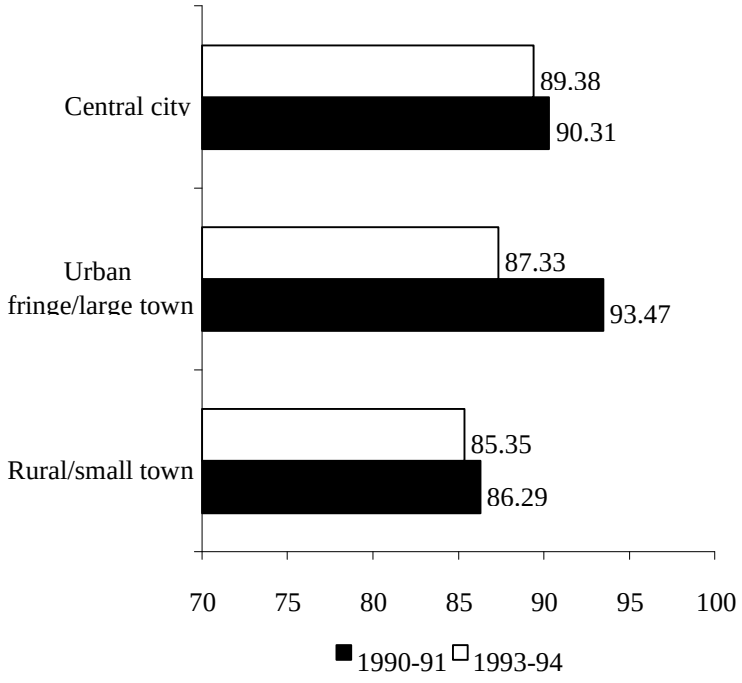


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Administrator Questionnaires).

For response rates by **urbanicity**, administrators in central city schools were the highest at 89.38 percent, followed by administrators in urban fringe/large town schools at 87.33 percent and administrators in rural/small town schools at 85.35 percent (Figure 2.3.8). For the 1990-91 SASS, administrators in urban fringe/large town schools were the highest at 93.47 percent, followed by administrators in central city schools at 90.31 percent and administrators in rural/small town schools at 86.29 percent.

Figure 2.3.8 -- Urbanicity response rates: SASS 1990-91 versus SASS 1993-94, Private School Administrator Component.

(Response rates in percent)

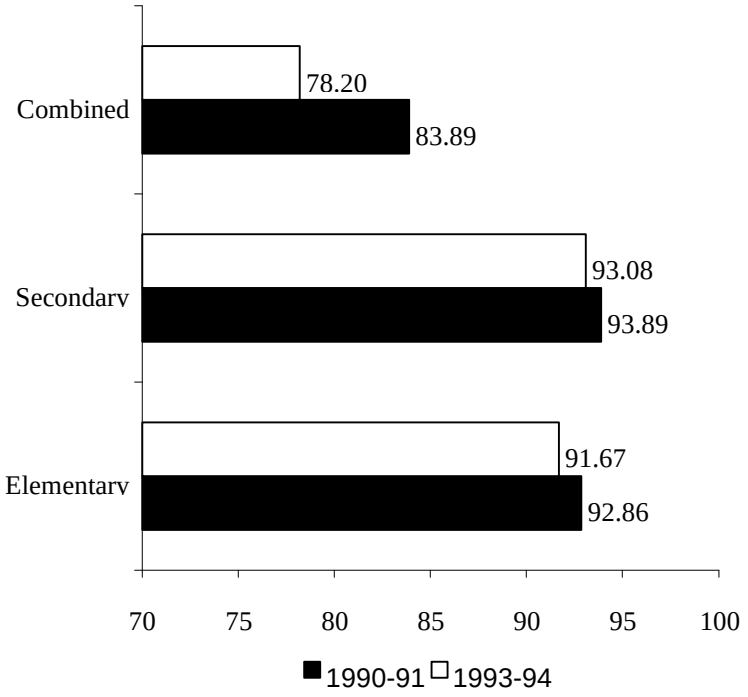


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School administrator Questionnaires).

The range of response rates for **school level** was almost 15 percentage points. Administrators in secondary schools had the highest response rate at 93.08 percent, followed by administrators in elementary schools at 91.67 percent and then administrators in combined schools at 78.20 percent (Figure 2.3.9). This pattern is exactly the same as the 1990-91 SASS: administrators in secondary schools had the highest response rate at 93.89 percent, followed by administrators in elementary schools (92.86 percent) and then administrators in combined schools (83.89 percent).

Figure 2.3.9 -- School level response rates: SASS 1990-91 versus SASS 1993-94, Private School Administrator Component.

(Response rates in percent)

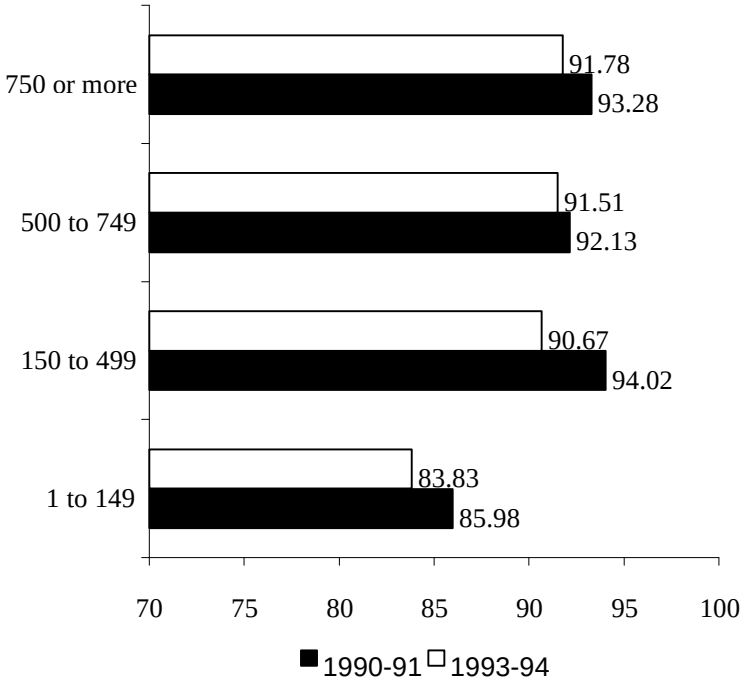


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Administrator Questionnaires).

School size response rates had a range of about eight percentage points. Administrators in schools with 750 or more students had the highest response rate at 91.78 percent, closely followed by administrators in schools with 500 to 749 students at 91.51 percent, administrators in schools with 150 to 499 students at 90.67 percent, and administrators in schools with 1 to 149 students at 83.83 percent (Figure 2.3.10). In the 1990-91 SASS, administrators in schools with 150 to 499 students was the highest (94.02 percent), followed by administrators in schools with 750 or more students (93.28 percent), administrators in schools with 500 to 749 students (92.13 percent), and administrators in schools with 1 to 149 students (85.98 percent).

Figure 2.3.10 -- School size response rates: SASS 1990-91 versus SASS 1993-94, Private School Administrator Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Administrator Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Private School Administrator Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of six school characteristics. The six characteristics[24] were:

1. Urbanicity
2. Region
3. School level
4. School size
5. Sampled in the 1990-91 SASS
6. 1991-92 PSS[25] status

Table 2.3.4 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for "rural/small town" schools, the response rate was 85.35 percent with a standard error of 2.053 and a sample size of 615. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following five a had significant association with response status at the α=0.05 level:

1. Region
2. School level
3. School size
4. Sampled in the 1990-91 SASS
5. 1991-92 PSS status

The association of response status with the remaining characteristic -- urbanicity -- was not significant at the α=0.05 level.

[24] The definitions for these characteristics can be found in the Glossary at the end of this report.
[25] Private School Survey (PSS)

Table 2.3.4 -- Significance test results: Schools and Staffing Survey 1993-94, Private School Administrator Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	85.35	2.053	615
Urban fringe/large town	87.33	1.158	1,160
Central city	89.38	0.829	1,263
Rao-Scott3 statistic: 3.2074	P-value: 0.1564		
Region			
Midwest	92.85	1.018	839
Northeast	85.52	1.326	843
South	84.20	1.853	818
West	87.26	1.874	538
Rao-Scott3 statistic: 17.0723	P-value: **0.0004**		
School level			
Elementary	91.67	0.650	1,484
Secondary	93.08	0.969	554
Combined	78.20	1.844	1,000
Rao-Scott3 statistic: 60.9903	P-value: **0.0000**		
School size			
1 to 149 students	83.83	1.514	1,089
150 to 499 students	90.67	0.606	1,480
500 to 749 students	91.51	1.780	271
750 or more students	91.78	1.497	198
Rao-Scott3 statistic: 20.5082	P-value: **0.0000**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Administrator Questionnaires).

Table 2.3.4 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Private School Administrator Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled in 1990-91 SASS			
Yes	91.72	1.392	773
No	86.75	0.858	2,265
Rao-Scott3 statistic: 8.1306 P-value: **0.0044**			
1991-92 PSS* status			
Respondent	89.14	0.646	2,842
Nonrespondent	47.84	8.023	57
Not in 1991-92 PSS	75.68	5.644	139
Rao-Scott3 statistic: 21.5378 P-value: **0.0000**			

*Private School Survey (PSS)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Administrator Questionnaires).

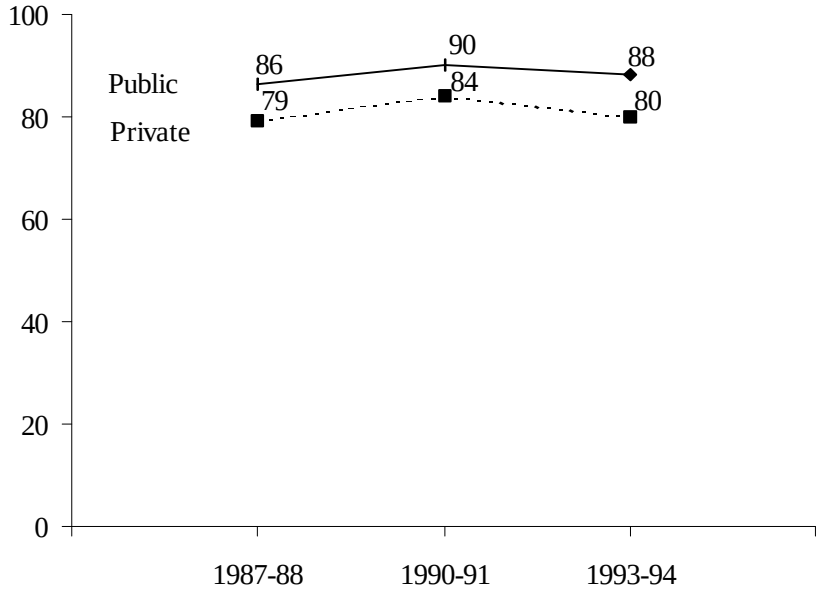
2.4 SASS Teacher Component[26]

The **Teacher Survey** collected information on each teacher's education and training, teaching assignments, teaching experience, certification, teaching workload, perceptions, and attitudes about teaching, job mobility, and work place conditions.[27]

Figure 2.4.1 gives a comparison of the weighted response rates for the public and private teacher components for all three rounds of the SASS survey. In this figure and in the remainder of this chapter the weighted response rate is used which does not include nonresponse due to a school not supplying a teacher list.

Figure 2.4.1 -- Weighted response rate comparison for the Public and Private Teacher Components: Schools and Staffing Survey 1987-88, 1990-91, and 1993-94.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88, 1990-91, and 1993-94 (Public and Private Teacher Questionnaires).

A **teacher** is defined as any full-time or part-time teacher who teaches in grades K-12. Itinerant teachers are included, as well as long-term substitutes who were filling the role of a regular teacher on an indefinite basis. An itinerant teacher is defined as a teacher who teaches at more than

[26] The sample design information is from Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.
[27] U.S. Department of Education, National Center for Education Statistics (1994),*SASS and PSS Questionnaires 1993-94*, NCES 94-674.

one school. Also included are teaching principals who teach regular classes on a full or part-time basis. Beginning in 1993-94, anyone in the school who teaches grades K-12, but whose primary assignment is something else is also defined to be a teacher. A sample teacher is considered out-of-scope if he/she is a short-term substitute, a student teacher, a nonteaching specialist (e.g., guidance counselor, librarian, nurse, psychologist), a teacher's aide, or in some other professional or support staff position (cooks, custodian, bus driver, dietitian, secretary). A teaching principal is considered out-of-scope only if the principal does not teach a regular class. If a sample school or LEA is out-of-scope, all its teachers are also considered out-of-scope.

Sample Design

In order to create the school teacher frame (for both public and private) sampled schools were asked to provide a list of their teachers along with the following information for each teacher:

1. The race of the teacher (see Glossary for definition);
2. Whether or not the teacher is a new teacher (see Glossary for definition);
3. Whether or not a teacher is a bilingual or ESL teacher (see Glossary for definition); and
4. The teacher's main subject area (see Glossary for definition).

For those in-scope schools which did not provide a teacher list no teachers were selected. Approximately five percent of in-scope public schools and nine percent of in-scope private schools did not provide teacher lists. This situation was accounted for in the teacher weighting.

Within each selected school, teachers were stratified into one of five teacher types in the following hierarchical order:

1. Asian or Pacific Islander (API)
2. American Indian, Aleut, or Eskimo (AIAE)
3. Bilingual/ESL
4. New (less than 3 years completed in the teaching profession)
5. Experienced (3 or more years completed teaching)

To illustrate the hierarchical ordering, if a teacher was both bilingual and Asian, that teacher would be classified as Asian. A new bilingual teacher would be classified as bilingual.

Within each school and teacher stratum, teachers were selected systematically with equal probability. There were 56,736 public school and 11,548 private school teachers selected for the 1993-94 SASS teacher survey.[28]

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

For public schools, the school listing form nonresponse adjustment cells were the same as those used for the school noninterview adjustment cells in the school weight except that enrollment size classes were replaced by teacher size classes[29] for Native American schools and other public schools. The collapsing criteria were also the same as those used in the school noninterview adjustment in the school weight. If the factor was less than 1.5 and there were at least 15 teachers in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 2.4.1 Teacher adjustment cells were defined using data from the school and teacher questionnaires for the numerator and denominator respectively.

For private list frame schools, the school nonresponse adjustment cells were the same as those used for the school noninterview adjustment cells in the school weight, except enrollment size classes were replaced by teacher size classes[30] in defining the cells. The collapsing criteria were the same as those used in the school noninterview adjustment in the school weight. If the factor was less than 1.5 and there were at least 15 teachers in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 2.4.1. Teacher adjustment cells were defined using data from the school and teacher questionnaires for the numerator and denominator, respectively.

[28] For the public teacher sample there were 47,105 responding teachers, 5,898 nonresponding teachers, and 3,733 out-of-scope teachers. For the private teacher sample there were 8,372 responding teachers, 2,014 nonresponding teachers, and 1,162 out-of-scope teachers.

[29] Teacher size classes for Native American schools are "19.9 or less" and "20.0 or more." Teacher size classes for regular public schools are "14.0 or less," "15.0 - 29.9," and "30.0 or more."

[30] Teacher size classes for the private school list frame are as follows: Elementary – "10.0 or less" and "10.1 or more;" Combined – "15.0 or less" and "15.1 or more;" Secondary – "30.0 or less" and "30.1 or more." Teacher size classes for the private school area frame are as follows: Elementary – "7.9 or less" and "8.0 or more;" Combined – "8.9 or less" and "9.0 or more;" Secondary – "29.9 or less" and "30.0 or more."

Table 2.4.1 gives the adjustment cells and collapsing order for the public and private school teacher components.

Table 2.4.1 -- Nonresponse adjustment procedures for Teacher Surveys.

	Public schools	Private schools list frame	Private schools area frame
School nonresponse	Adjustment cells: state by school level by teacher size class by urbanicity	Adjustment cells: association by school level by teacher size class by urbanicity[1]	Adjustment cells: 3-level typology by school level by teacher size class
	Collapsing order: teacher size class urbanicity school level	Collapsing order: teacher size class urbanicity[1] school level association	Collapsing order: teacher size class school level 3-level typology
Teacher nonresponse	Adjustment cells: state by main field of teaching by teacher type[3] by urbanicity[2]	Adjustment cells: association by main field of teaching by teaching experience[4] by urbanicity[1]	Adjustment cells: 3-level typology by main field of teaching by teaching experience[4]
	Collapsing order: urbanicity teacher type[3] main field of teaching	Collapsing order: urbanicity[1] teaching experience[4] main field of teaching association	Collapsing order: teaching experience[4] main field of teaching 3-level typology

[1] For Catholic and All Else Associations only.
[2] For experienced teachers only.
[3] Teacher types are new, experienced, bilingual, Asian, and American.
[4] Teaching experience is new versus experienced.

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

2.4.1 Public School Teacher Component

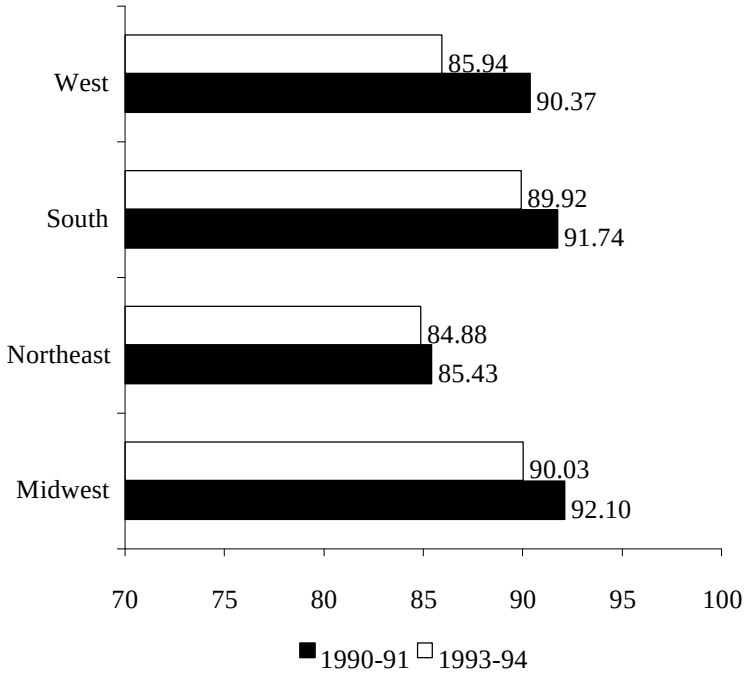
Public School Teacher Response Rates: 1993-94 versus 1990-91 SASS

The in-scope sample size for the 1993-94 SASS Public School Teacher Component was 53,003 with an overall response rate of 88.22 percent. This rate is below that in the 1990-91 SASS (90.33 percent).

Region response rates differed by just over 5 percentage points from a high in the Midwest of 90.03 percent to a low in the Northeast of 84.88 percent (Figure 2.4.2). The ranking of the regions by response rates was exactly the same as that in the 1990-91 SASS. In the 1990-91 SASS, the Midwest was also the high at 92.10 percent, followed by the South (91.74 percent), the West (90.37 percent), and the Northeast the low at 85.43 percent. So the 1993-94 SASS had regional response rates which were lower than in 1990-91 and had a smaller range.

Figure 2.4.2 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Public School Teacher Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Teacher Questionnaires).

The greatest difference in **state** level response rates is over 22 percentage points with the District of Columbia the lowest at 70.91 percent and North Dakota the highest at 93.26 percent

(Table 2.4.2). There are some similarities here with the 1990-91 SASS, where the District of Columbia had the lowest response rate at 69.40 percent and New York was the second lowest at 79.23 percent, while North Dakota had the fifth highest rate (95.79 percent). It is interesting to note that Utah, which was the best responding state in the 1990-91 SASS at 97.88 percent, did not make the top ten in the 1993-94 SASS.

Table 2.4.2 -- Ten highest and lowest weighted response rates by state: Schools and Staffing Survey 1993-94, Public School Teacher Component.

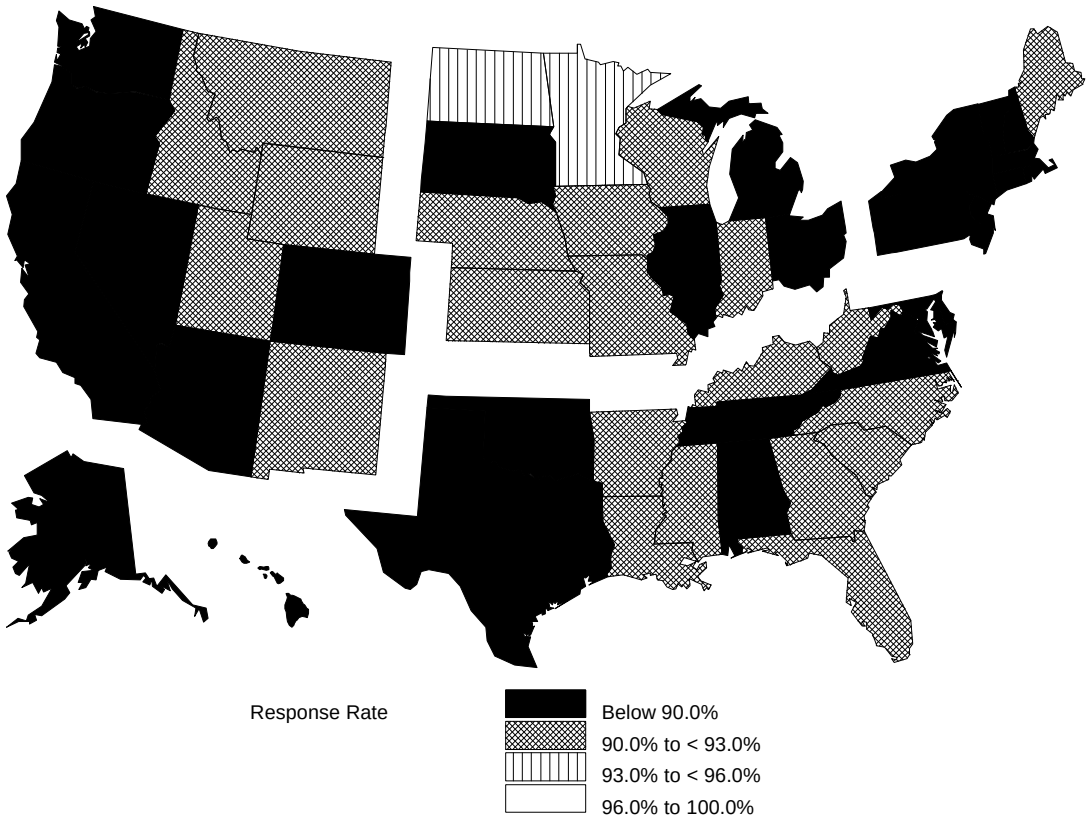
(Response rates in percent)

	Highest			Lowest	
State	**Region**	**response rate**	**State**	**Region**	**response rate**
North Dakota	Midwest	93.26	District of Columbia	South	70.91
Minnesota	Midwest	93.00	New York	Northeast	79.91
Idaho	West	92.69	California	West	81.92
Wisconsin	Midwest	92.50	Nevada	West	84.01
Nebraska	Midwest	92.18	Rhode Island	Northeast	84.51
Iowa	Midwest	91.98	New Jersey	Northeast	85.68
West Virginia	South	91.98	Hawaii	West	85.71
Georgia	South	91.73	Alaska	West	85.77
Missouri	Midwest	91.69	Delaware	South	85.86
Montana	West	91.61	Vermont	Northeast	86.22

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

As to the location of the 10 best responding **states**, the Midwest had six of the ten best responding states, followed by the South and West with two each (Table 2.4.2). This is similar to the 1990-91 SASS, where the Midwest had five of the ten best responding states, the South and West had two, and the Northeast had one. For the lowest responding states, the Northeast and the West had four apiece, while the South had the remaining two. This is some what similar to the 1990-91 SASS, where the Northeast had five of the bottom ten states followed by the Midwest and West with two each and then the South with one.

Figure 2.4.3 -- Weighted response rates for Public Schools: Schools and Staffing Survey 1993-94, Public School Teacher Component.



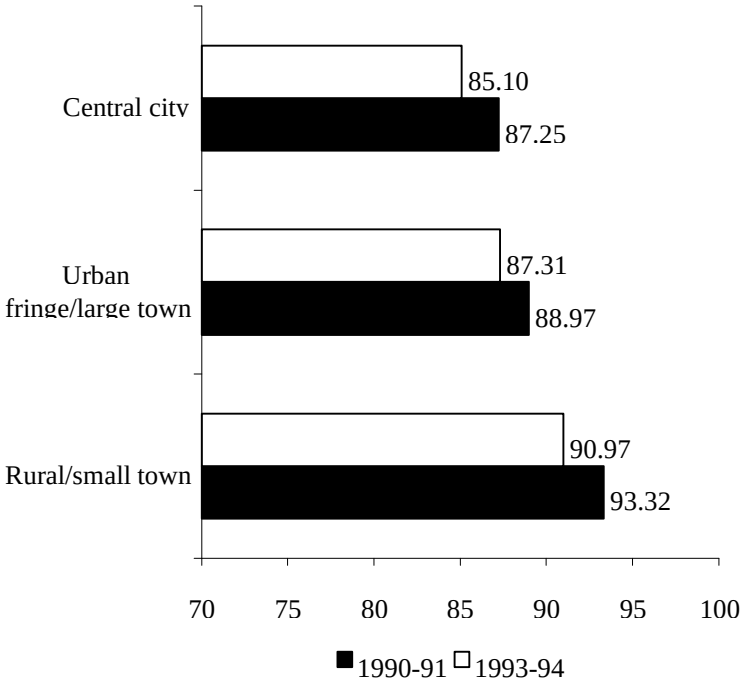
NOTE: The District of Columbia, at 70.91 percent, has not been shown separately.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

For response rates by **urbanicity**, rural/small town school teachers were the highest at 90.97 percent, followed by urban fringe/large town school teachers at 87.31 percent and central city school teachers at 85.10 percent (Figure 2.4.4). This order was exactly the same as the 1990-91 SASS, where rural/small town school teachers were the highest at 93.32 percent, followed by urban fringe/large town school teachers at 88.97 percent and central city school teachers at 87.25 percent.

Figure 2.4.4 -- Urbanicity response rates: SASS 1990-91 versus SASS 1993-94, Public School Teacher Component.

(Response rates in percent)

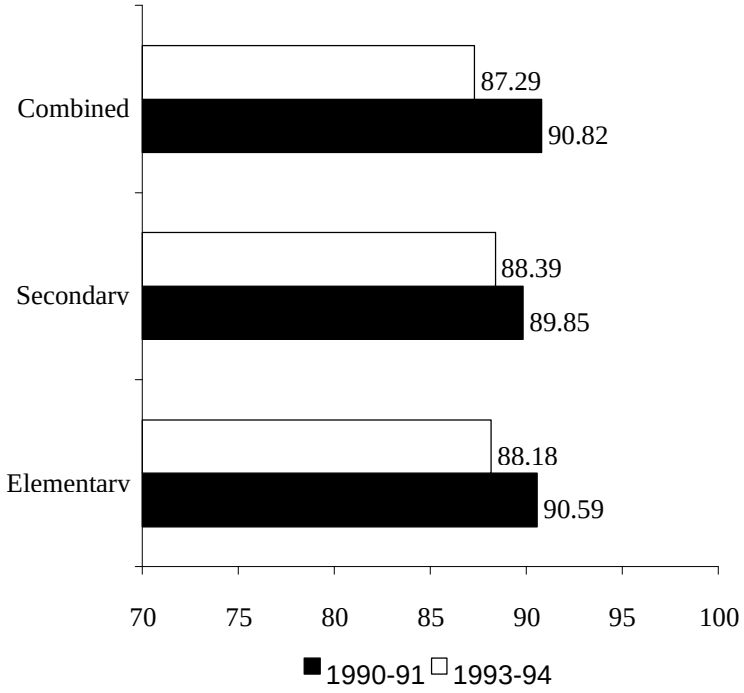


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Teacher Questionnaires).

The range of response rates for **school level** was just over one percent. Secondary school teachers had the highest response rate at 88.39 percent, followed closely by elementary school teachers at 88.18 percent and then combined school teachers at 87.29 percent (Figure 2.4.5). These response rates were lower than the school level response rates for the 1990-91 SASS. The order of school level response rates in the 1990-91 SASS was different with combined school teachers the highest followed by elementary and secondary school teachers with response rates of 90.82 percent, 90.59 percent, and 89.85 percent respectively, a range of less than one percent. The one similarity between the 1990-91 and 1993-94 SASS is that the range of the response rates is around one percent.

Figure 2.4.5 -- School level response rates: SASS 1990-91 versus SASS 1993-94, Public School Teacher Component.

(Response rates in percent)

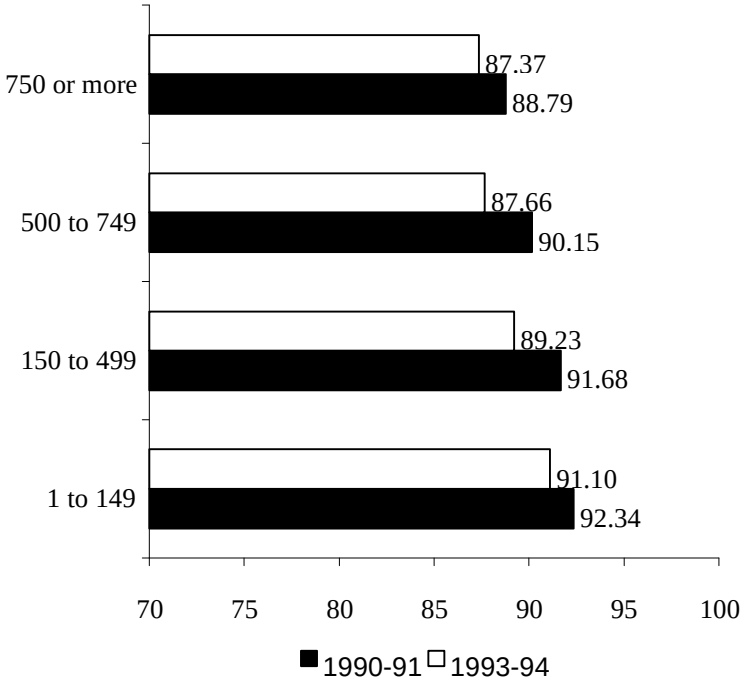


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Teacher Questionnaires).

School size response rates had a range of less than four percentage points. Teachers in schools with 1 to 149 students had the highest response rate at 91.10 percent, followed by teachers in schools with 150 to 499 students at 89.23 percent, teachers in schools with 500 to 749 students at 87.66 percent, and teachers in schools with 750 or more students at 87.37 percent (Figure 2.4.6). This pattern is exactly the same as the 1990-91 SASS, where the response rate decreased as the school size increased. In the 1990-91 SASS teachers in schools with 1 to 149 students had the highest response rate at 92.34 percent followed by teachers in schools with 150 to 499 students at 91.68 percent, teachers in schools with 500 to 749 students at 90.15 percent, and then teachers in schools with 750 or more students at 88.79 percent.

Figure 2.4.6 -- School size response rates: SASS 1990-91 versus SASS 1993-94, Public School Teacher Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Teacher Questionnaires).

Associations between Response Status and School and Teacher Characteristics for the SASS 1993-94 Public School Teacher Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of 11 school and teacher characteristics. The 11 characteristics[31] were:

1. School sampled with certainty
2. Urbanicity
3. Region
4. Minority enrollment
5. Race of teacher
6. School level
7. School size
8. School type
9. School sampled in 1990-91 SASS
10. New teacher
11. Main subject

Table 2.4.3 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for schools with a minority enrollment of "less than 5.5%," the response rate was 90.99 percent with a standard error of 0.347 and a sample size of 19,903. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following eight had a significant association with response status at the α=0.05 level:

1. Urbanicity
2. Region
3. Minority enrollment
4. Race of teacher
5. School size
6. School type
7. New teacher
8. Main subject

The association of response status with the remaining three characteristics -- school sampled with certainty, school level, and school sampled in 1990-91 SASS -- were not significant at the α=0.05 level.

[31] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 2.4.3 -- Significance test results: Schools and Staffing Survey 1993-94, Public School Teacher Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled with certainty			
Yes	88.09	0.525	4,092
No	88.23	0.255	48,911
Rao-Scott3 statistic: 0.0635 P-value: 0.8011			
Urbanicity			
Rural/small town	90.97	0.344	26,603
Urban fringe/large town	87.31	0.405	13,596
Central city	85.10	0.561	12,804
Rao-Scott3 statistic: 83.6533 P-value: **0.0000**			
Region			
Midwest	90.03	0.480	12,415
Northeast	84.88	0.756	8,508
South	89.92	0.318	17,811
West	85.94	0.644	14,269
Rao-Scott3 statistic: 60.9702 P-value: **0.0000**			
Minority enrollment			
Less than 5.5%	90.99	0.347	19,903
5.5 - 20.5%	88.96	0.449	11,461
20.5 - 50.5%	88.10	0.572	10,628
Greater than 50.5%	83.34	0.672	11,011
Rao-Scott3 statistic: 105.2280 P-value: **0.0000**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

Table 2.4.3 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Teacher Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Race of teacher			
AIAE*	86.56	1.116	1,120
Asian/Pacific Islander	87.53	0.968	1,211
Black/non-Hispanic	84.25	1.087	2,840
Hispanic	85.76	1.548	1,473
White/non-Hispanic	89.72	0.215	41,333
Other	80.87	1.242	5,026
Rao-Scott3 statistic: 72.7825	P-value: **0.0000**		
School level			
Elementary	88.18	0.424	18,184
Secondary	88.39	0.240	28,968
Combined	87.29	0.482	5,851
Rao-Scott3 statistic: 0.5481	P-value: 0.5225		
School size			
1 to 149 students	91.10	0.482	5,185
150 to 499 students	89.23	0.414	16,816
500 to 749 students	87.66	0.593	11,315
750 or more students	87.37	0.428	19,687
Rao-Scott3 statistic: 14.0338	P-value: **0.0013**		
School type			
Non-regular	86.25	0.761	2,520
Regular	88.26	0.259	50,483
Rao-Scott3 statistic: 5.6792	P-value: **0.0172**		

* American Indian, Aleut, or Eskimo.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

Table 2.4.3 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Teacher Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled in 1990-91 SASS			
Yes	87.91	0.501	16,207
No	88.36	0.282	36,796
Rao-Scott3 statistic: 0.6308 P-value: 0.4271			
New teacher			
Yes	89.74	0.549	5,434
No	88.06	0.261	47,569
Rao-Scott3 statistic: 9.0499 P-value: **0.0026**			
Main subject			
English	87.65	0.720	5,081
General elementary	87.03	0.575	13,087
Mathematics	89.89	0.547	4,173
Other elementary	88.82	0.885	3,282
Other secondary	88.96	0.492	10,304
Science	89.15	0.846	3,793
Social studies	85.83	0.884	3,877
Special education elementary	90.27	0.855	2,030
Special education secondary	90.12	0.804	3,544
Vocational education	91.14	0.539	3,832
Rao-Scott3 statistic: 28.6211 P-value: **0.0001**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

2.4.2 Private School Teacher Component

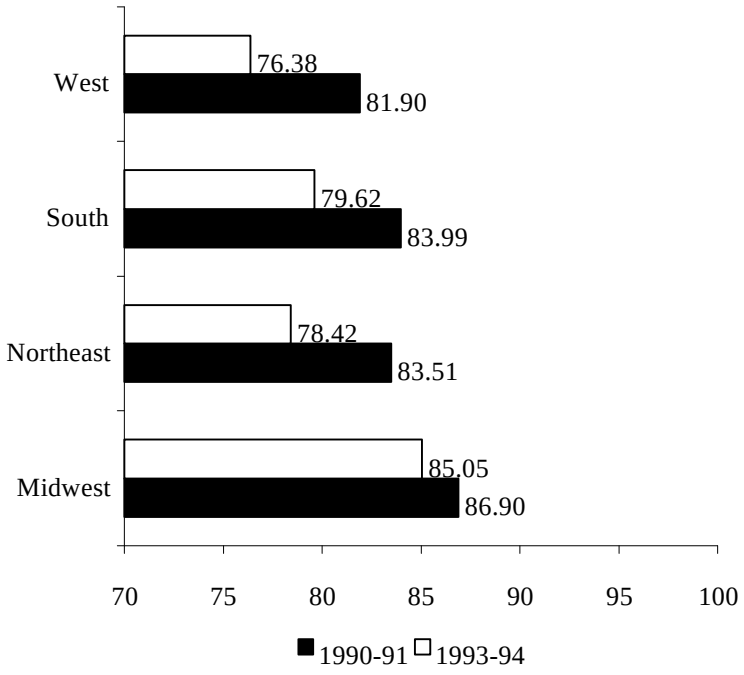
Private School Teacher Response Rates: 1993-94 versus 1990-91 SASS

The in-scope sample size for the 1993-94 SASS Private School Teacher Component was 10,386 with an overall response rate of 80.18 percent. This rate is over four percentage points lower than that in the 1990-91 SASS (84.31 percent).

Region response rates differed by almost nine percentage points from a high in the Midwest of 85.05 percent to a low in the West of 76.38 percent (Figure 2.4.7). In the 1990-91 SASS, the Midwest was also the high and the West the low at 86.90 and 81.90 percent, respectively.

Figure 2.4.7 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Private School Teacher Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Teacher Questionnaires).

The greatest difference in **stratum** response rates is almost 35 percentage points with Other Jewish the lowest at 55.84 percent and Evangelical Lutheran Church - Wisconsin the highest at 90.68 percent (Table 2.4.4). There are some similarities here with the 1990-91 SASS, where Other Jewish also had the lowest response rate at 57.12 percent, while Evangelical Lutheran Church - Wisconsin had the second highest rate (92.06 percent). For the 1990-91 SASS, the highest response rate was for the Lutheran Church - Missouri Synod (94.83 percent).

Table 2.4.4 -- Weighted stratum response rates: Schools and Staffing Survey 1993-94, Private School Teacher Component.

(Response rates in percent)

Association	Response rate
Evangelical Lutheran Church - Wisconsin	90.68
Lutheran Church - Missouri Synod	90.52
Association of Military Colleges and Schools of U.S.	88.81
General Conference of Seventh-Day Adventists	88.59
Evangelical Lutheran Church in America	88.19
Other Lutheran	84.47
Friends Council on Education	84.21
National Association of Episcopal Schools	84.10
National Catholic Ed. Association, Jesuit Secondary	83.34
National Association of Independent Schools	82.89
National Association of Private Schools for Exceptional Children	81.37
Solomon Schechter Day Schools	78.16
Christian Schools International	76.95
All Else*	75.85
National Independent Private Schools Association	75.20
American Montessori Society, other Montessori	72.19
Area Frame	71.25
American Association of Christian Schools	64.49
National Society of Hebrew Day Schools	63.12
Other Jewish	55.84

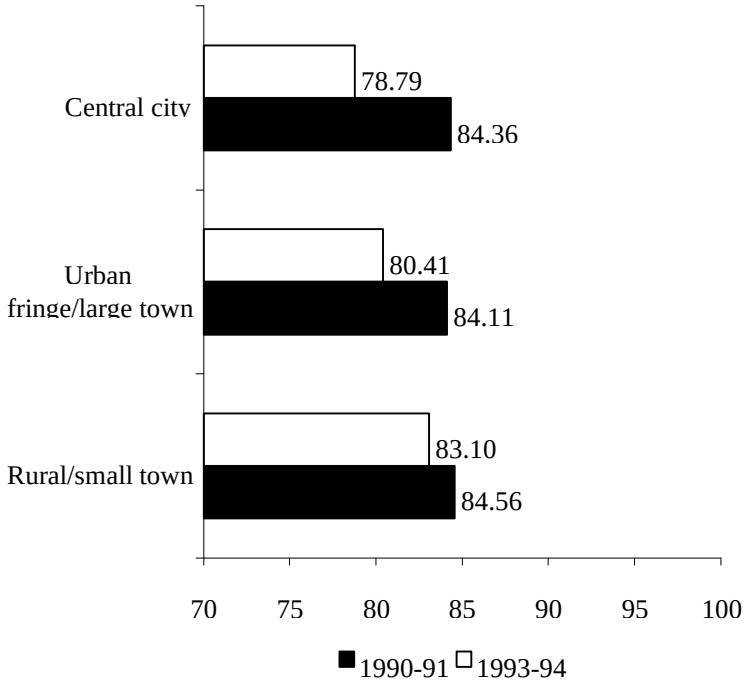
* All Else -- a member of any other association specified in the Private School Survey or affiliated with a group not listed above or not a member of any association.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Teacher Questionnaires).

For response rates by **urbanicity**, teachers in rural/small town schools were the highest at 83.10 percent, followed by teachers in urban fringe/large town schools at 80.41 percent and teachers in central city schools at 78.79 percent (Figure 2.4.8). For the 1990-91 SASS the response rates for urbanicity were tightly grouped: teachers in rural/small town schools were the highest at 84.56 percent, followed by teachers in central city schools at 84.36 percent and teachers in urban fringe/large town schools at 84.11 percent.

Figure 2.4.8 -- Urbanicity response rates: SASS 1990-91 versus SASS 1993-94, Private School Teacher Component.

(Response rates in percent)

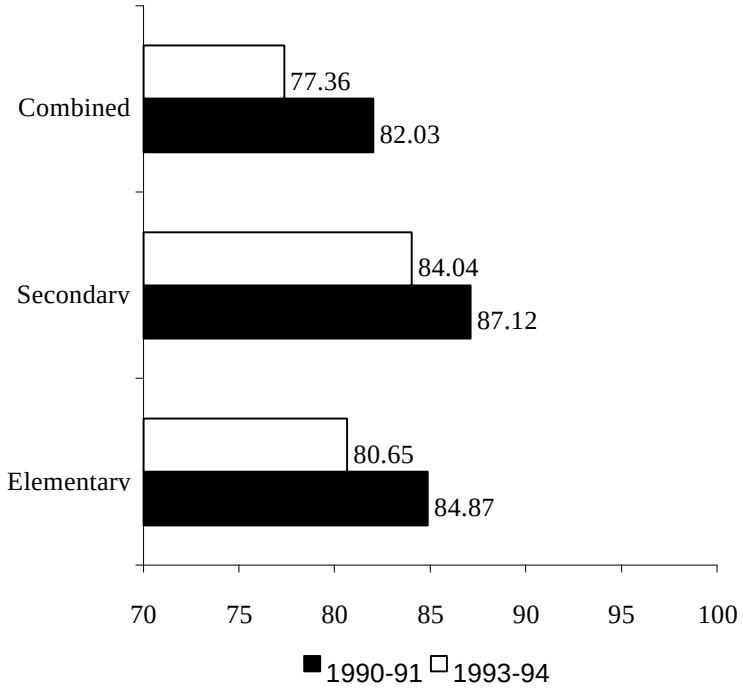


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Teacher Questionnaires).

The range of response rates for **school level** was almost seven percentage points. Teachers in secondary schools had the highest response rate at 84.04 percent, followed by teachers in elementary schools at 80.65 percent and then teachers in combined schools at 77.36 percent (Figure 2.4.9). This pattern is exactly the same as the 1990-91 SASS, when teachers in secondary schools had the highest response rate at 87.12 percent, followed by teachers in elementary schools (84.87 percent) and then teachers in combined schools (82.03 percent).

Figure 2.4.9 -- School level response rates: SASS 1990-91 versus SASS 1993-94, Private School Teacher Component.

(Response rates in percent)

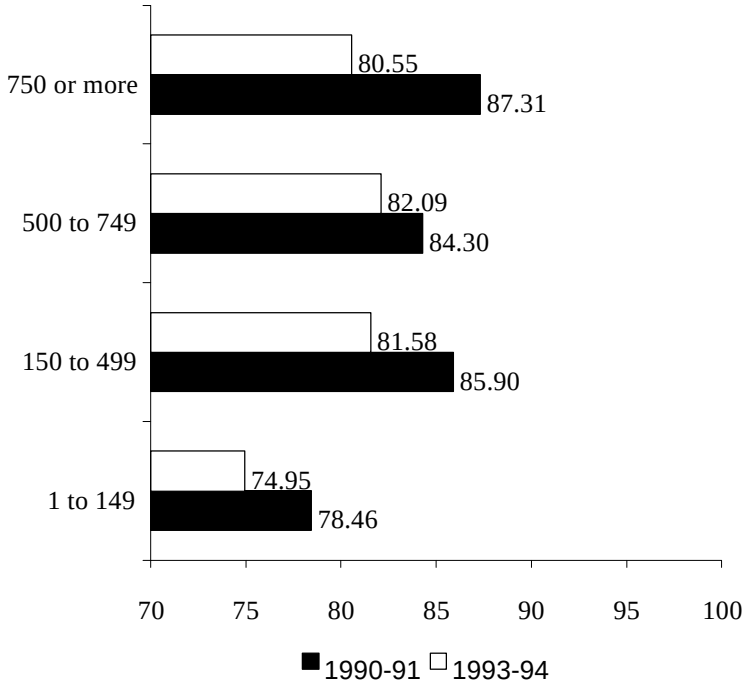


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Teacher Questionnaires).

School size response rates had a range just over seven percentage points. Teachers in schools with 500 to 749 students had the highest response rate at 82.09 percent, closely followed by teachers in schools with 150 to 499 students at 81.58 percent, teachers in schools with 750 or more students at 80.55 percent, and teachers in schools with 1 to 149 students at 74.95 percent (Figure 2.4.10). In the 1990-91 SASS, teachers in schools with 750 or more students were the highest (87.31 percent), followed by teachers in schools with 150 to 499 students (85.90 percent), teachers in schools with 500 to 749 students (84.30 percent), and teachers in schools with 1 to 149 students (78.46 percent).

Figure 2.4.10 -- School size response rates: SASS 1990-91 versus SASS 1993-94, Private School Teacher Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School Teacher Questionnaires).

Associations between Response Status and School and Teacher Characteristics for the SASS 1993-94 Private School Teacher Component

It was ascertained whether there was a significant difference between respondents and nonrespondents for each of eight school and teacher characteristics. The eight characteristics[32] were:

1. Urbanicity
2. Region
3. New teacher
4. Race of teacher
5. School level
6. School size
7. 1991-92 PSS[33] status
8. Main subject

Table 2.4.5 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for "rural/small town" schools, the response rate was 83.10 percent with a standard error of 1.297 and a sample size of 1,951. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following seven had significant association with response status at the α=0.05 level:

1. Urbanicity
2. Region
3. Race of teacher
4. School level
5. School size
6. 1991-92 PSS status
7. Main subject

The association of response status with the remaining characteristic -- new teacher -- was not significant at the α=0.05 level.

[32] The definitions for these characteristics can be found in the Glossary at the end of this report.
[33] Private School Survey (PSS)

Table 2.4.5 -- Significance test results: Schools and Staffing Survey 1993-94, Private School Teacher Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	83.10	1.297	1,951
Urban fringe/large town	80.41	0.890	4,047
Central city	78.79	0.726	4,388
Rao-Scott3 statistic: 8.8871	P-value: **0.0094**		
Region			
Midwest	85.05	0.873	3,113
Northeast	78.42	1.195	2,751
South	79.62	0.937	2,608
West	76.38	1.535	1,914
Rao-Scott3 statistic: 30.1528	P-value: **0.0000**		
New teacher			
Yes	81.02	0.977	2,029
No	80.05	0.624	8,357
Rao-Scott3 statistic: 0.9866	P-value: 0.3206		
Race of teacher			
American Indian and Eskimo	77.88	4.956	119
Asian/Pacific Islander	81.87	3.106	230
Black/non-Hispanic	69.53	2.955	366
Hispanic	78.95	2.326	236
Other	67.70	3.878	353
White/non-Hispanic	81.11	0.606	9,082
Rao-Scott3 statistic: 23.7058	P-value: **0.0000**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Teacher Questionnaires).

Table 2.4.5 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Private School Teacher Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School level			
Elementary	80.65	0.682	5,493
Secondary	84.04	0.870	2,380
Combined	77.36	1.214	2,513
Rao-Scott3 statistic: 18.5226	P-value: **0.0001**		
School size			
1 to 149 students	74.95	1.567	2,788
150 to 499 students	81.58	0.648	5,505
500 to 749 students	82.09	1.509	1,184
750 or more students	80.55	1.290	909
Rao-Scott3 statistic: 20.8621	P-value: **0.0001**		
1991-92 PSS (Private School Survey) status			
Respondent	80.72	0.569	9,931
Nonrespondent	63.83	7.813	107
Not in 1991-92 PSS	68.21	3.483	348
Rao-Scott3 statistic: 11.9597	P-value: **0.0018**		
Main subject			
English	81.92	1.284	705
General elementary	78.78	0.797	4,297
Mathematics	81.27	1.884	698
Other elementary	77.99	1.135	1,095
Other secondary	81.09	0.750	1,937
Science	83.48	1.038	573
Social studies	85.87	1.371	544
Special education elementary	78.67	3.747	243
Special education secondary	77.88	3.285	222
Vocational education	83.71	4.500	72
Rao-Scott3 statistic: 22.6546	P-value: **0.0014**		

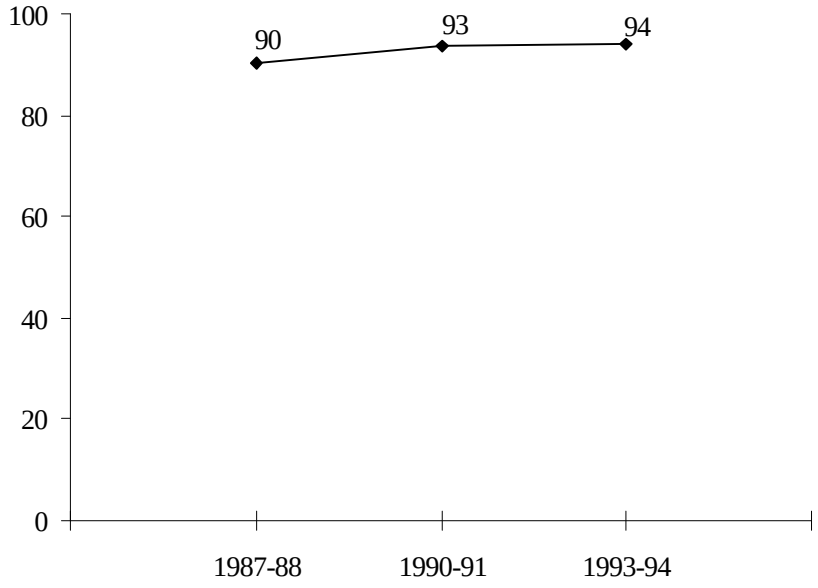
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Teacher Questionnaires).

2.5 SASS Teacher Demand and Shortage Component [34]

The **Teacher Demand and Shortage Survey** was mailed to public school districts only. For private schools, this information was collected on the School Survey. The questionnaires requested information on student enrollment, number of teachers (in full-time equivalents), teacher qualifications, new hires, hiring criteria, library media specialist/librarians, programs and services provided by the district, teacher salary schedules, staffing incentives, and high school graduation requirements. [35]

Figure 2.5.1 gives a comparison of the weighted response rates for the public Teacher Demand and Shortage component for all three rounds of the SASS survey.

Figure 2.5.1 -- Weighted response rate comparison for the Public Teacher Demand and Shortage Component: Schools and Staffing Survey 1987-88, 1990-91, and 1993-94.



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88, 1990-91, and 1993-94 (Teacher Demand and Shortage Questionnaires).

The CCD defines a **Local Education Agency (LEA)**, or public school district, as a government agency administratively responsible for providing public elementary and/or secondary instruction and educational support services. The agency or administrative unit must operate under a public board of education. Districts that do not operate schools but do hire teachers are included. An

[34] The sample design information is from Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.
[35] U.S. Department of Education, National Center for Education Statistics (1994),*SASS and PSS Questionnaires 1993-94*, NCES 94-674.

LEA was considered out-of-scope for the Teacher Demand and Shortage Survey if it did not employ elementary or secondary teachers of any kind, including special education teachers and itinerant teachers.

Sample Design

The LEA sample consists of the set of LEAs that were associated with the SASS public school sample and some LEAs that were not associated with schools. LEAs not associated with schools may hire teachers who teach in schools of other LEAs. For SASS to represent teachers in these LEAs not associated with schools, a sample of these LEAs was also selected. The frame for this sample consisted of all LEAs on the 1991-92 CCD file that were not associated with schools. There were 988 LEAs on this frame. The 337 LEAs that were supervisory unions were excluded from sample. A supervisory union is an organization that oversees one or more LEAs. They generally do not directly employ teachers and so are not eligible for sample. After the removal of the supervisory LEAs a one in six sample was taken from the remaining 651 LEAs. One hundred and nine LEAs were selected and only five were in-scope.

The in-scope sample size for the 1993-94 SASS Public Teacher Demand and Shortage Component was 5,363 with an overall response rate of 93.90 percent. This rate is slightly higher than in the 1990-91 SASS (93.49 percent).

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

Noninterview and frame ratio adjustments are computed within cells. The noninterview adjustment cells were: state by LEA enrollment size class by metro status (central city of MSA, outside central city of MSA, outside MSA) for LEAs with schools, and metro status only for LEAs without schools. If the factor was less than 1.5 and there were at least 10 LEAs in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 2.5.1.

Table 2.5.1 -- Nonresponse adjustment procedures for Teacher Demand and Shortage Survey.

LEAs with schools	LEAs without schools
Adjustment cells: state by LEA enrollment size class by metropolitan status	Adjustment cells: metropolitan status
Collapsing order: LEA enrollment size class metropolitan status	Collapsing order: metropolitan status

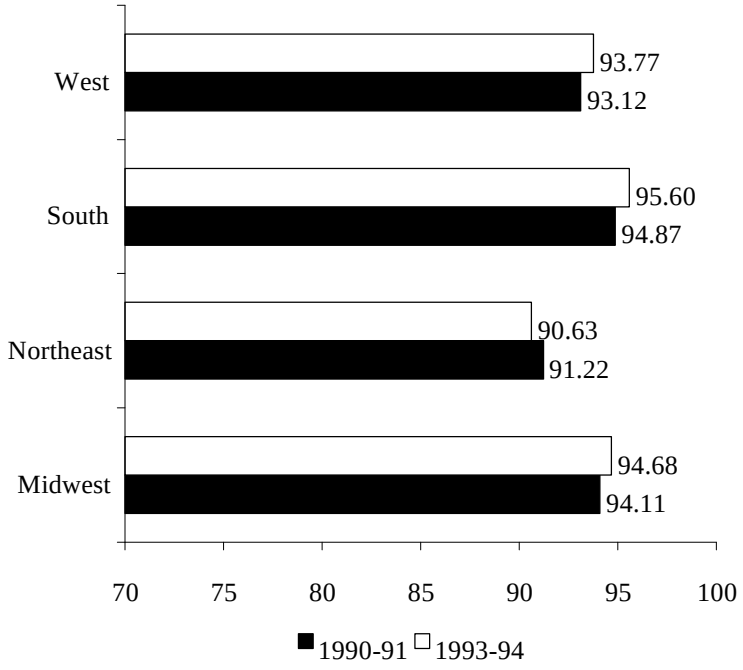
SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation,* NCES 96-089.

Teacher Demand and Shortage Response Rates: 1993-94 versus 1990-91

Region response rates differed by about 5 percentage points from a high in the South of 95.60 percent to a low in the Northeast of 90.63 percent (Figure 2.5.2). The ranking of the regions by response rates was exactly the same as that in the 1990-91 SASS. In the 1990-91 SASS, the South was also the high at 94.87 percent, followed by the Midwest (94.11 percent), the West (93.12 percent), and the Northeast the low at 91.22 percent. So the 1993-94 SASS had regional response rates which were slightly higher than in 1990-91 and with a wider range.

Figure 2.5.2 -- Region response rates: SASS 1990-91 versus SASS 1993-94, Public Teacher Demand and Shortage Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School Teacher Questionnaires).

The greatest difference in **state** level response rates is over 23 percentage points with New Jersey the lowest at 76.87 percent. There were five states on the high end at 100.00 percent: the District of Columbia, Hawaii, Nevada, Ohio, and Rhode Island (Table 2.5.2). There are some similarities here with the 1990-91 SASS, where Connecticut had the lowest response rate at 76.96 percent followed by new Jersey at 86.28 percent. In the 1990-91 SASS there was also a group of five states reporting at 100.00. Three of the five, the District of Columbia, Hawaii, and Nevada, were the same in the 1990-91 SASS. The two differences were that Tennessee and Delaware reported at 100.00 percent in the 1990-91 SASS. However, both of these states are absent from the top ten in the 1993-94 SASS.

Table 2.5.2 -- Ten highest and lowest weighted response rates by state: Schools and Staffing Survey 1993-94, Public Teacher Demand and Shortage Component.

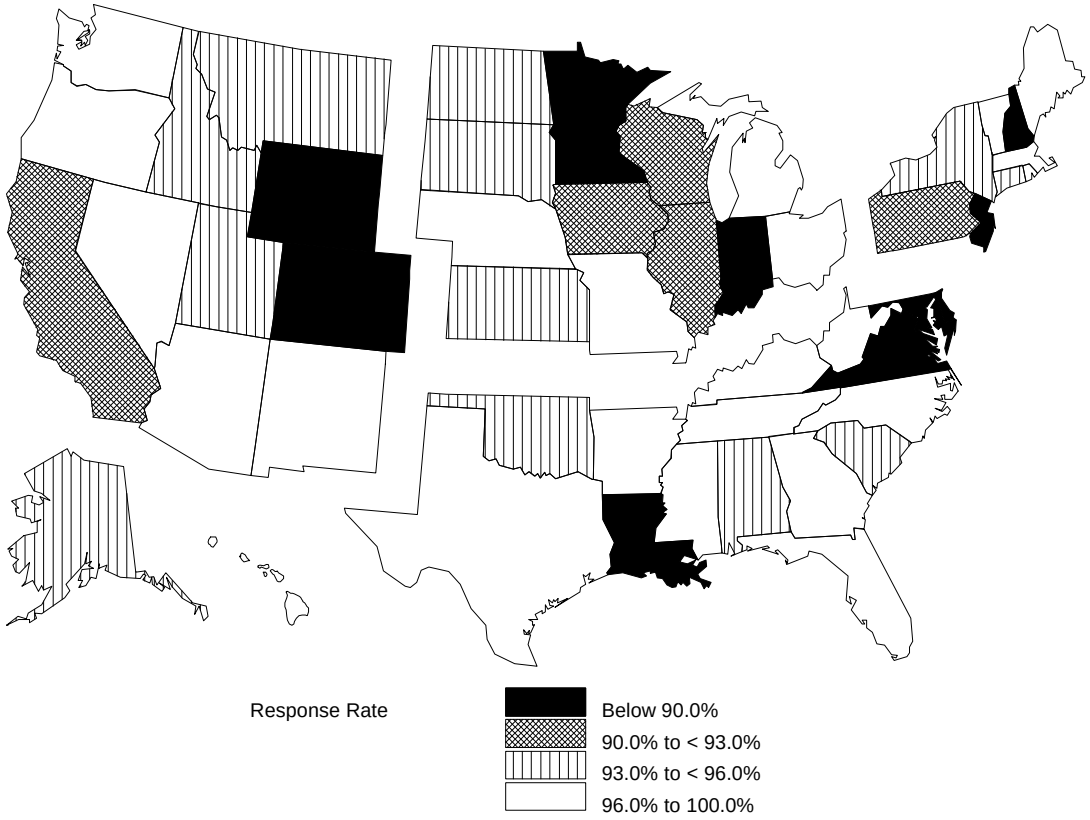
(Response rates in percent)

	Highest			Lowest	
State	**Region**	**response rate**	**State**	**Region**	**response rate**
District of Columbia	South	100.00	New Jersey	Northeast	76.87
Hawaii	West	100.00	Maryland	South	82.51
Nevada	West	100.00	Wyoming	West	85.17
Ohio	Midwest	100.00	New Hampshire	Northeast	86.68
Rhode Island	Northeast	100.00	Virginia	South	88.43
Kentucky	South	99.43	Louisiana	South	88.68
Vermont	Northeast	99.08	Indiana	Midwest	89.08
Arizona	West	98.66	Colorado	West	89.27
Florida	South	98.39	Delaware	South	89.47
Oregon	West	98.04	Minnesota	Midwest	89.59

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Teacher Demand and Shortage Questionnaires).

As to the location of the 10 best responding **states**, the West had four of the ten best responding states, followed by the South with three, the Northeast with two, and the Midwest with one (Table 2.5.2). This is different from the 1990-91 SASS, where the South had four of the ten best responding states and the Midwest and the West each had three. For the lowest responding states, the South had four, while the Northeast, Midwest, and West had two apiece. This is some what similar to the 1990-91 SASS, where the Northeast and South had three of the bottom ten states followed by the Midwest and West with two each.

Figure 2.5.3 -- Weighted response rates for Local Education Agencies: Schools and Staffing Survey 1993-94, Public Teacher Demand and Shortage Component.



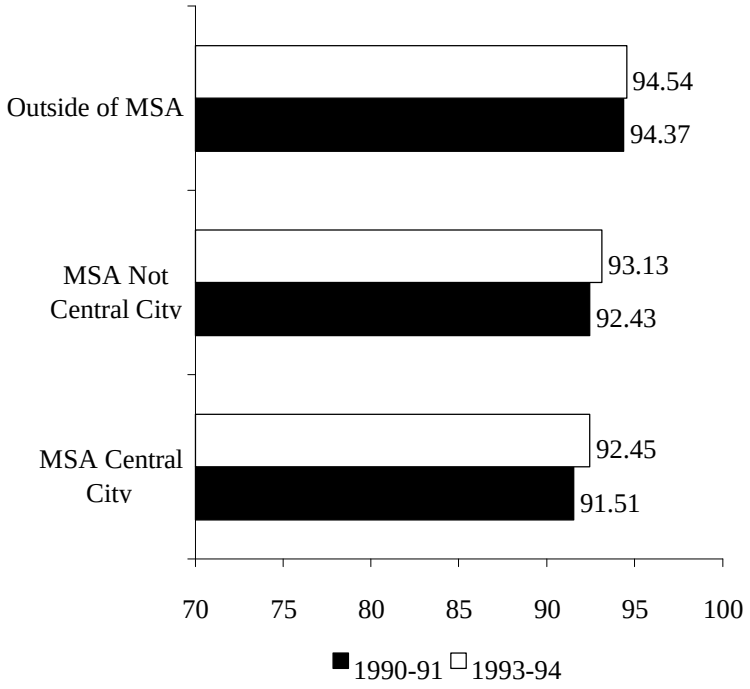
NOTE: The District of Columbia, at 100.00 percent, has not been shown separately.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Teacher Demand and Shortage Questionnaires).

For response rates by **metropolitan statistical area** (MSA), LEAs outside of MSA were the highest at 94.54 percent, followed by LEAs in MSA not central city at 93.13 percent and LEAs in MSA central city at 92.45 percent (Figure 2.5.4). This order was exactly the same as the 1990-91 SASS, where LEAs outside of MSA were the highest at 94.37 percent, followed by urban LEAs in MSA not central city at 92.43 percent and LEAs in MSA central City at 91.51 percent.

Figure 2.5.4 -- Metropolitan Statistical Area (MSA) response rates: SASS 1990-91 versus SASS 1993-94, Public Teacher Demand and Shortage Component.

(Response rates in percent)

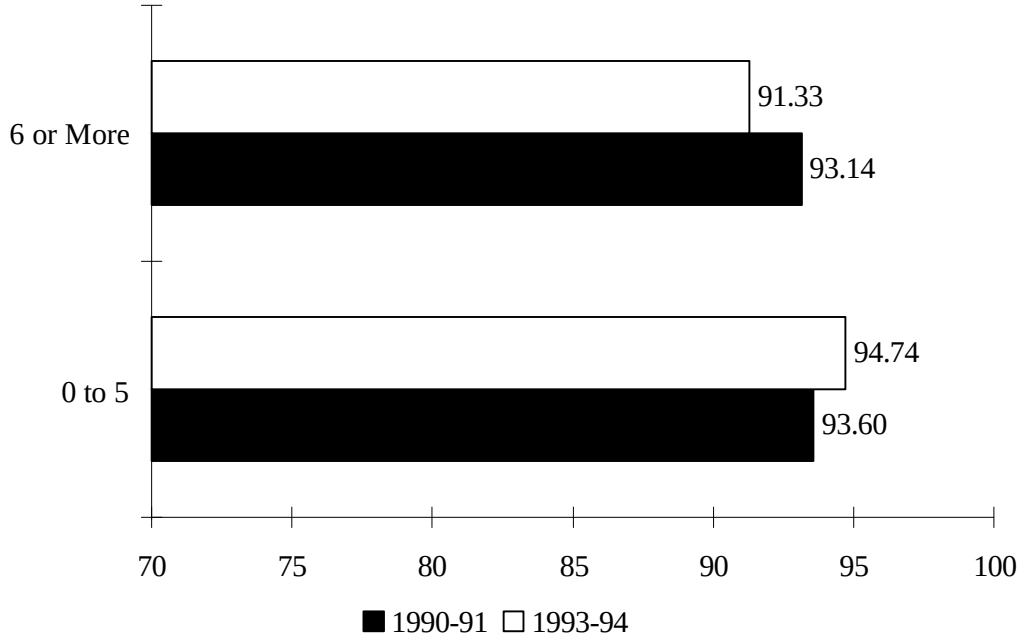


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public Teacher Demand and Shortage Questionnaires).

For the number of **schools in the LEA**, LEAs with 0 to 5 schools had a response rate of 94.74 percent, and LEAs with 6 or more schools had a response rate of 91.33 percent (Figure 2.5.5). For the 1990-91 SASS, LEAs with 0 to 5 schools had a response rate of 93.60 percent, and LEAs with 6 or more schools had a response rate of 93.14 percent.

Figure 2.5.5 -- Number of Schools in Local Education Agency (LEA) response rates: SASS 1990-91 versus SASS 1993-94, Public Teacher Demand and Shortage Component.

(Response rates in percent)

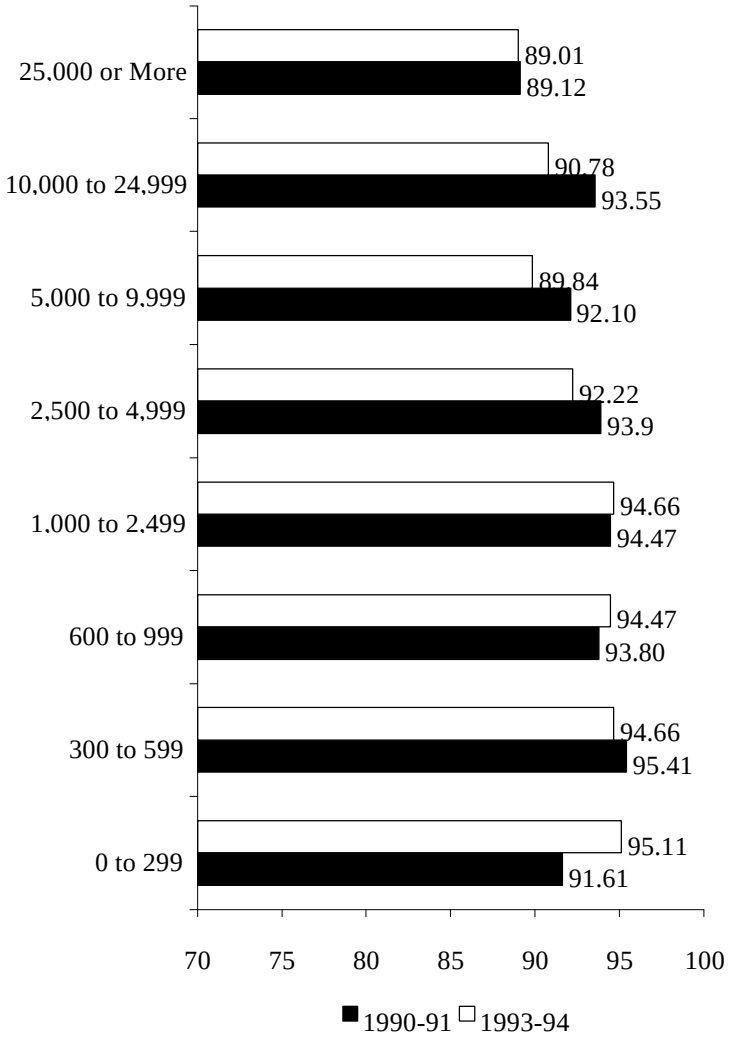


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public Teacher Demand and Shortage Questionnaires).

Number of students in the LEA response rates had a range of just over six percentage points. LEAs with 0 to 299 students had the highest response rate at 95.11 percent, while LEAs with 25,000 or more students was the lowest at 89.01 percent (Figure 2.5.6). In the 1990-91 SASS, LEAs with 300 to 599 students was the highest at 95.41 percent and LEAs with 25,000 or more students was the lowest (89.12 percent).

Figure 2.5.6 -- Number of students in Local Education Agency (LEA) response rates: SASS 1990-91 versus SASS 1993-94, Public Teacher Demand and Shortage Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public Teacher Demand and Shortage Questionnaires).

Associations between Response Status and District Characteristics for the SASS 1993-94 Teacher Demand and Shortage Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of six LEA characteristics. The LEA characteristics[36] were:

1. Big LEA
2. Number of schools in LEA
3. Number of students in LEA
4. Metropolitan Statistical Area
5. Region
6. LEA sampled in 1990-91 SASS

Table 2.5.3 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for LEAs with "0 to 299 students," the response rate was 95.11 percent with a standard error of 0.759 and a sample size of 644. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following five had a significant association with response status at the α=0.05 level:

1. Big LEA
2. Number of schools in LEA
3. Number of students in LEA
4. Metropolitan Statistical Area
5. Region

The association of response rates with the remaining characteristic -- LEA sampled in 1990-91 SASS -- was not significant at the α=0.05 level.

[36] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 2.5.3 -- Significance test results: Schools and Staffing Survey 1993-94, Public Teacher Demand and Shortage Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Big LEA			
Yes	88.75	0.740	226
No	93.98	0.342	5,137
Rao-Scott3 statistic: 40.4676	P-value: **0.0000**		
Number of schools in LEA			
0 to 5 schools	94.74	0.437	2,905
6 or more schools	91.33	0.419	2,458
Rao-Scott3 statistic: 28.5527	P-value: **0.0000**		
Number of students in LEA			
0 to 299 students	95.11	0.759	644
300 to 599 students	94.66	0.983	595
600 to 999 students	94.47	1.203	503
1,000 to 2,499 students	94.66	0.535	1,235
2,500 to 4,999 students	92.22	0.790	1,040
5,000 to 9,999 students	89.84	0.944	706
10,000 to 24,999 students	90.78	0.520	449
25,000 or more students	89.01	0.202	191
Rao-Scott3 statistic: 20.6121	P-value: **0.0007**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Teacher Demand and Shortage Questionnaires).

Table 2.5.3 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public Teacher Demand and Shortage Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Metropolitan Statistical Area			
MSA* central city	92.45	0.689	421
MSA not central city	93.13	0.587	2,070
Outside of MSA	94.54	0.438	2,872
Rao-Scott3 statistic: 5.3018 P-value: **0.0373**			
Region			
Midwest	94.68	0.461	1,608
Northeast	90.63	1.077	1,064
South	95.60	0.457	1,601
West	93.77	0.723	1,090
Rao-Scott3 statistic: 18.4768 P-value: **0.0001**			
LEA sampled in 1990-91 SASS			
Yes	93.80	0.367	3,335
No	94.00	0.570	2,028
Rao-Scott3 statistic: 0.0828 P-value: 0.7736			

* Metropolitan Statistical Area (MSA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Teacher Demand and Shortage Questionnaires).

Chapter 3

New SASS Components

3.1 Introduction

This chapter analyzes the response rates for the new components of the 1993-94 SASS. The new components of SASS consist of the public and private library, librarian, and student record components. Since this is the first time that these components were conducted only the response rates for the 1993-94 SASS will be presented.

In this chapter there is one section each covering the library, librarian, and student record components. These sections are further divided into public and private sections. The sections are uniform in their approach. First, before the discussion of response rates, a brief description of the sample design and nonresponse adjustment factors for the component is given. Then, in parallel with the descriptive presentation of response rates for the core components, the overall 1993-94 response rates are presented by geographic region, state/affiliation, type of urbanicity, type of school level, and type of school size. Finally, the results of testing whether there is a significant difference between respondents and nonrespondents for a range of characteristics are provided. Tests were performed using a modified Pearson chi-squared test statistic called Rao-Scott3 (RS3).[37] See Appendix B for a description of the significance tests.

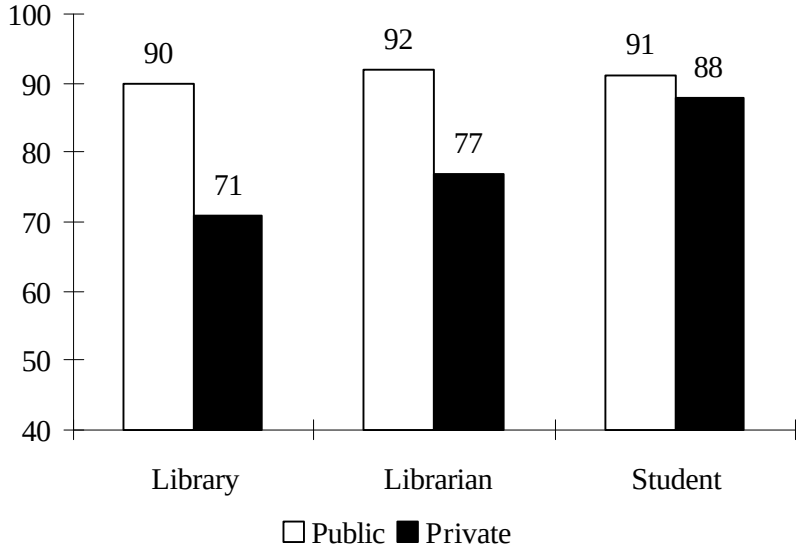
In each section the weighted response rates are used unless otherwise specified. (Note: the scale of some bar charts in this chapter has been adjusted from the scale commonly used in this report; that is, in some bar charts the scale starts at 40 percent instead of at 70 percent.) Appendix A contains weighted and unweighted response rate tables for each survey component. These tables contain national, regional, and state/affiliation level response rates for several variables.

Figure 3.1.1 gives a comparison of the weighted response rates for the public and private library, librarian, and student components for the 1993-94 SASS. Please note, in this figure and in the remainder of this chapter, the weighted response rates for the student components do not include nonresponse due to a school not supplying a teacher list.

[37] Rao and Scott (1981), "The Analysis of Categorical Data from Complex Sample Surveys: Chi-squared Tests for Goodness of Fit and Independence in Two-way Tables," *Journal of the American Statistical Association*, 76: 221-230. Rao and Scott (1984), "On Chi-squared Tests for Multiway Contingency Tables with Cell Proportions Estimated from Survey Data," *The Annals of Statistics*, 12: 46-60.

Figure 3.1.1 -- Overall response rate comparison for the new SASS components, the Public and Private Library, Librarian, and Student Components: Schools and Staffing Survey 1993-94.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88, 1990-91, and 1993-94 (Public and Private Library, Librarian, and Student Questionnaires).

3.2 SASS Library/Media Center Component

The **Library Survey** consisted of two parts -- one on the library and media equipment and services available to the students and the other on the qualifications and working conditions of the school library media specialist/librarian.[38]

A **library media center** is defined as an organized collection of printed and/or audiovisual and/or computer resources that (a) is administered as a unit, (b) is located in a designated place or places, and (c) makes resources and services available to students, teachers, and administrators. This definition, not the name, is important; it may be called a library, media center, resource center, information center, instructional materials center, learning resource center, or some other name. A library media center sample case is considered out-of-scope if the school does not have a library. Also, if the sample library's school is considered out-of-scope, the library is also classified as out-of-scope.

[38] U.S. Department of Education, National Center for Education Statistics (1994),*SASS and PSS Questionnaires 1993-94*, NCES 94-674.

3.2.1 Public School Library/Media Center Component [39]

Sample Design

The 1993-94 SASS public school library frame is the same as the frame used for the 1993-94 public school survey (Section 2.1). The BIA schools were placed in a separate stratum, while all non-BIA schools were stratified by 1) state (51 states including the District of Columbia) and 2) within each state schools were then stratified by the three school levels (elementary, secondary, and combined), as described in section 1.3.

All schools in the BIA stratum were selected with certainty. For each non-BIA stratum schools were systematically subsampled using a probability proportionate to size algorithm. The measure of size used for the schools was the square root of the number of teachers in the school as reported on the school CCD file times the school's inverse of the probability of selection from the public school sample file. Any school with a measure of size larger than the sampling interval was excluded from the library sampling operation and included in the sample with certainty.

There were 5,170 schools selected for the 1993-94 SASS public school library and librarian survey. The sample included 176 schools from the BIA stratum and 4,994 schools subsampled from the non-BIA stratum. [40]

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

For public schools except BIA schools, the Type A Noninterview Adjustment cells[41] and Type B Noninterview Adjustment cells[42] were state by grade level by enrollment by urbanicity. If

[39] The sample design information is from Abramson et al. (1996).*1993-94 Schools and Staffing Survey: Sample Design and Evaluation.* NCES 96-089.

[40] For the non-BIA public library sample there were 4,242 responding libraries, 413 nonresponding libraries, and 339 out-of-scope libraries. For the non-BIA public librarian sample there were 3,903 responding librarians, 272 nonresponding librarians, and 819 out-of-scope librarians.

[41] Type A Noninterview Adjustment Factor is an adjustment that accounts for library nonrespondents that did not report whether or not they had a library (generally refusals or unable to contact). It is the weighted (basic weight x subsample factor x sampling adjustment factor) ratio of the total of schools reporting to be with and without libraries plus schools which did not report whether or not they had a library to the total of schools with and without libraries. Schools without libraries are ratio adjusted in order to study the characteristics of such schools.

[42] Type B Noninterview Adjustment Factor is an adjustment that accounts for school nonrespondents that reported having a library. It is the weighted (basic weight x subsample factor x sampling adjustment factor) ratio of the total eligible in-scope libraries (schools with libraries interviewed plus not interviewed) to the total interviewed schools with libraries.

the factor was less than or equal to 1.5 and there were at least 10 schools in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 3.2.1.

Table 3.2.1 -- Nonresponse adjustment procedures for Public School Library and Librarian Surveys.

Adjustment cells	Collapsing order
state	school size
by school level	urbanicity
by school size	school level
by urbanicity	

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

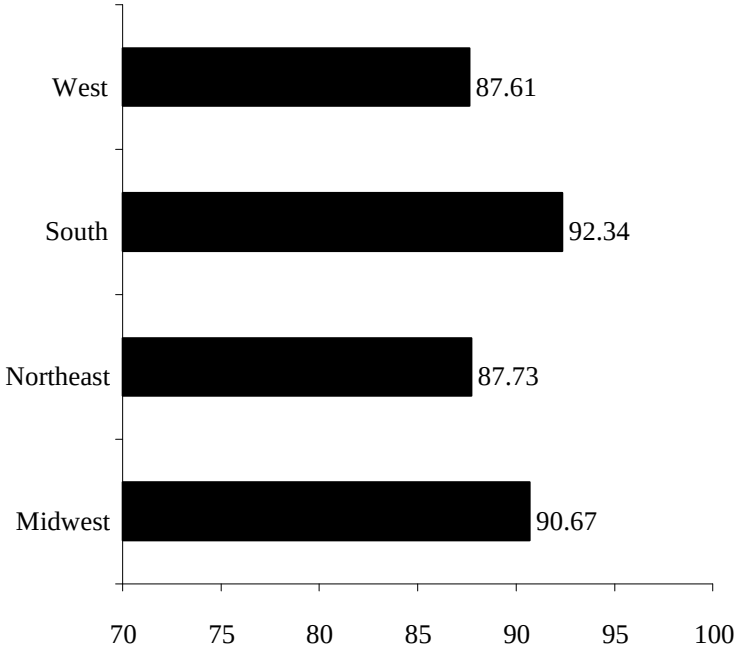
Public School Library Response Rates: 1993-94

The in-scope sample size for the 1993-94 SASS Public School Library Component was 4,655 with an overall response rate of 90.07 percent. The greatest difference in **state** level response rates is just under 24 percentage points with Alaska the lowest at 73.84 percent and Alabama the highest at 97.79 percent (Table 3.2.2).

Region response rates differed by less than five percentage points from a high in the South of 92.34 percent to a low in the West of 87.61 percent (Figure 3.2.1).

Figure 3.2.1 -- Region response rates: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

As to the location of the 10 best responding **states**, the South had four of the ten best responding states, followed by the West with three, the Midwest with two, and the Northeast with one (Table 3.2.2). For the lowest responding states, the South and the Midwest had three apiece, while the Northeast and West had two each.

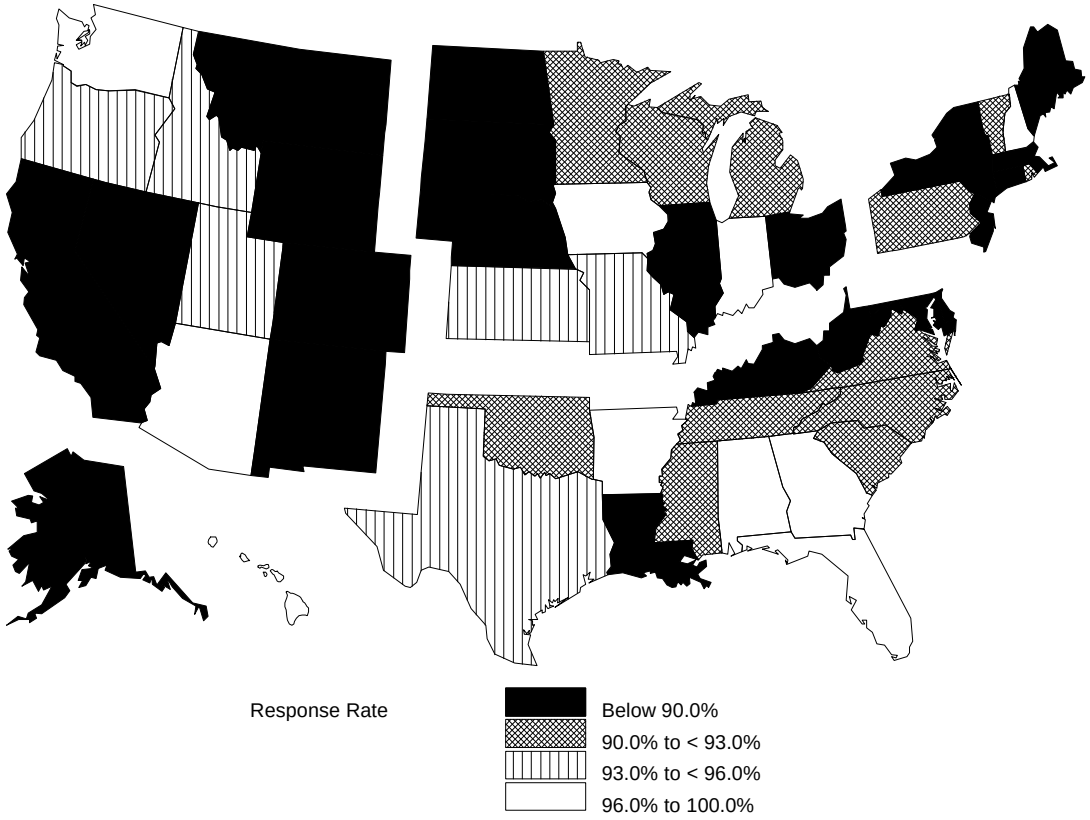
Table 3.2.2 -- Ten highest and lowest weighted response rates by state: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates in percent)

State	Region	Highest response rate	State	Region	Lowest response rate
Alabama	South	97.79	Alaska	West	73.84
Florida	South	97.52	Nebraska	Midwest	79.77
Hawaii	West	97.15	Louisiana	South	80.22
Arizona	West	97.01	South Dakota	Midwest	81.44
Arkansas	South	96.77	California	West	82.09
Iowa	Midwest	96.77	New Jersey	Northeast	83.05
Indiana	Midwest	96.53	North Dakota	Midwest	83.06
New Hampshire	Northeast	96.39	Kentucky	South	84.62
Washington	West	96.19	New York	Northeast	85.39
Georgia	South	96.15	West Virginia	South	85.44

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

Figure 3.2.2 -- Weighted response rates for Public Schools: Schools and Staffing Survey 1993-94, Public School Library Component.



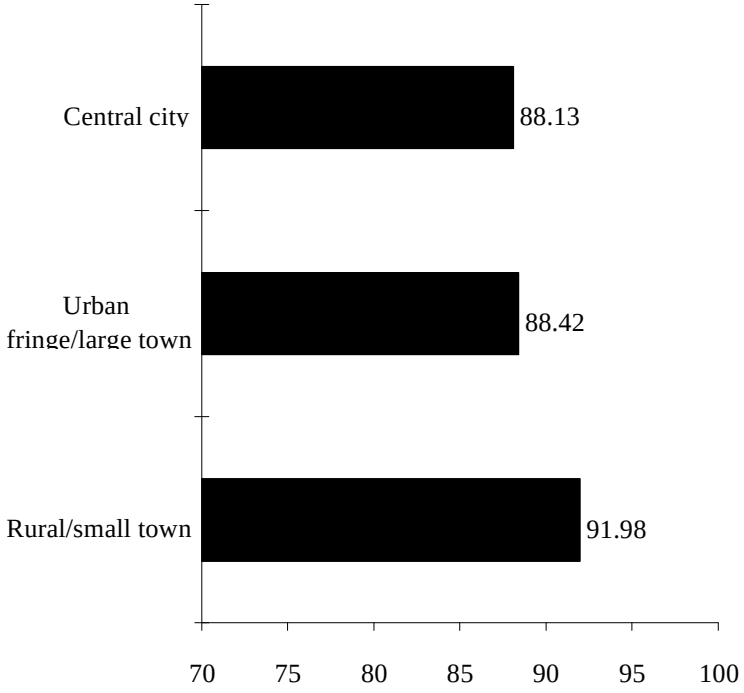
NOTE: The District of Columbia, at 85.44 percent, has not been shown separately.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

For response rates by **urbanicity**, rural/small town school libraries were the highest at 91.98 percent, followed by urban fringe/large town school libraries at 88.42 percent and central city school libraries at 88.13 percent (Figure 3.2.3).

Figure 3.2.3 -- Urbanicity response rates: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates in percent)

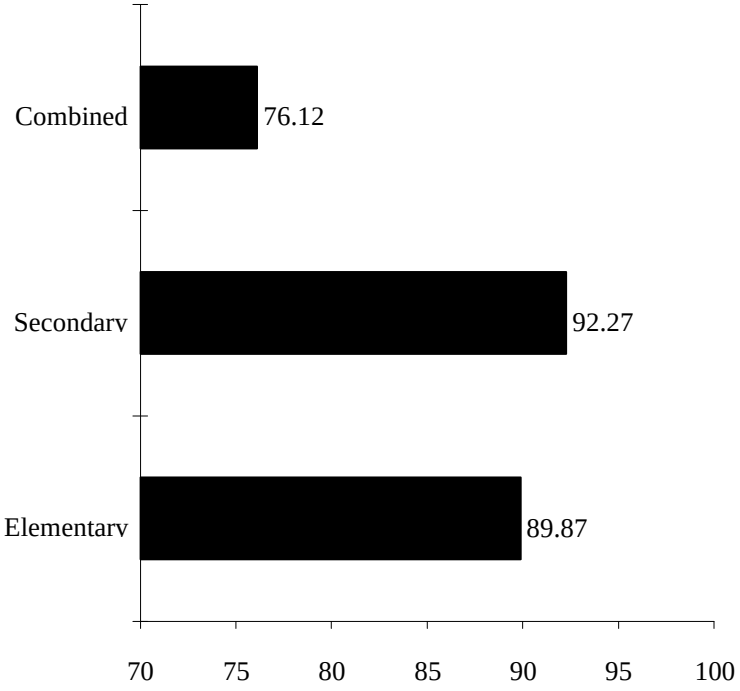


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

The range of response rates for **school level** was just over 16 percent. Secondary school libraries had the highest response rate at 92.27 percent, followed by elementary school libraries at 89.87 percent and then combined school libraries at 76.12 percent (Figure 3.2.4).

Figure 3.2.4 -- School level response rates: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates in percent)

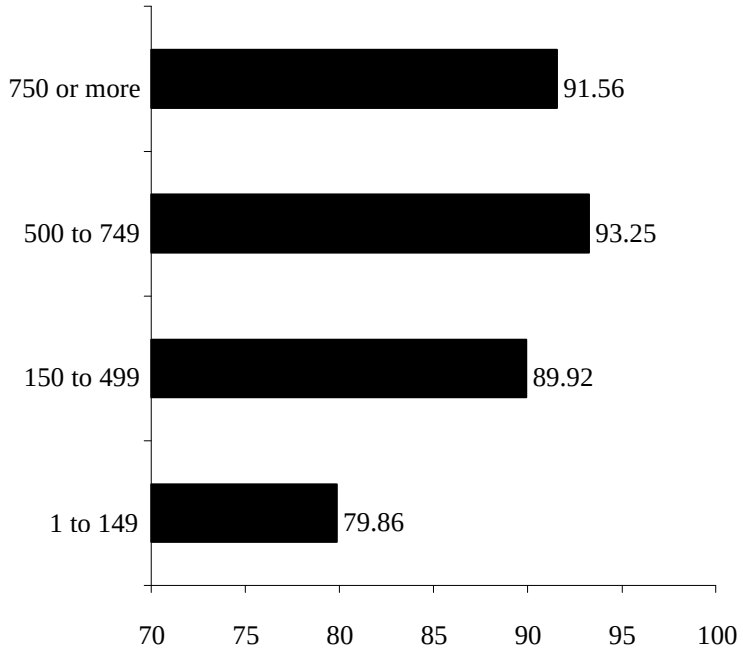


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

School size response rates had a range of almost 12 percentage points. Libraries in schools with 500 to 749 students had the highest response rate at 93.29 percent, followed by libraries in schools with 750 or more students at 91.56 percent, libraries in schools with 150 to 499 students at 89.92 percent, and libraries in schools with 1 to 149 students at 79.86 percent (Figure 3.2.5).

Figure 3.2.5 -- School size response rates: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Public School Library Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of seven school characteristics. The school characteristics[43] were:

1. Urbanicity
2. Region
3. Minority enrollment
4. School level
5. School size
6. School type
7. School sampled in 1990-91 SASS

Table 3.2.3 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for schools with a minority enrollment of "less than 5.5%," the response rate was 91.08 percent with a standard error of 0.834 and a sample size of 1,819. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following five had a significant association with response status at the α=0.05 level:

1. Urbanicity
2. Minority enrollment
3. School level
4. School size
5. School type

The association of response rates with the remaining two characteristics -- region and school sampled in 1990-91 SASS -- were not significant at the α=0.05 level.

[43] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 3.2.3 -- Significance test results: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	91.98	0.828	2,379
Urban fringe/large town	88.42	1.054	1,171
Central city	88.13	1.670	1,105
Rao-Scott3 statistic: 6.8803	P-value: **0.0262**		
Region			
Midwest	90.67	1.265	1,042
Northeast	87.73	1.812	770
South	92.34	0.698	1,659
West	87.61	1.883	1,184
Rao-Scott3 statistic: 6.8543	P-value: 0.0581		
Minority enrollment			
Less than 5.5%	91.08	0.834	1,819
5.5 - 20.5%	92.17	1.425	991
20.5 - 50.5%	90.30	1.529	902
Greater than 50.5%	85.83	1.815	943
Rao-Scott3 statistic: 9.2499	P-value: **0.0189**		
School Level			
Elementary	89.87	0.785	2,206
Secondary	92.27	0.980	1,955
Combined	76.12	1.818	494
Rao-Scott3 statistic: 31.3568	P-value: **0.0000**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

Table 3.2.3 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School size			
1 to 149 students	79.86	2.510	486
150 to 499 students	89.92	0.945	1,744
500 to 749 students	93.25	1.145	1,102
750 or more students	91.56	1.164	1,323
Rao-Scott3 statistic: 27.8893	P-value: **0.0000**		
School type			
Non-regular	52.61	6.258	187
Regular	90.98	0.604	4,468
Rao-Scott3 statistic: 18.4549	P-value: **0.0000**		
School sampled in 1990-91 SASS			
Yes	89.11	1.219	1,401
No	90.48	0.772	3,254
Rao-Scott3 statistic: 0.8685	P-value: 0.3514		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

3.2.2 Private School Library/Media Center Component [44]

Sample Design

The 1994 SASS private school library frame is the same frame used for the 1993-94 SASS private school survey, except that schools with special program emphasis, special education, vocational, or alternative curriculum were excluded.[45] The remaining schools were then stratified by one of three school types: Catholic, Other Religious, and Nonsectarian (see Glossary for definition). Within these school types, schools were then stratified by the three school levels: elementary, secondary, and combined (see Glossary for definition). Then the schools were stratified by urbanicity, rural/small town, urban fringe/large town, and central city (see Glossary for definition).

Within each stratum, schools were systematically selected using a probability proportionate to size algorithm. The measure of size used was the school's measure of size times the school's inverse of the probability of selection. Any library with a measure of size larger than the sampling interval was excluded from the probability sampling process and included in the sample with certainty.

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

For private school libraries from the list frame, the noninterview adjustment cells (for both Type A[46] and B[47]) were: 3-level typology by school level by urbanicity by school size class. If the factor was less than 2.0 and there were at least 15 schools in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 3.2.4.

[44] The sample design information is from Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

[45] For the private library sample there were 1,607 responding libraries, 460 nonresponding libraries, and 1,248 out-of-scope libraries. For the private librarian sample there were 1,138 responding librarians, 218 nonresponding librarians, and 1,959 out-of-scope librarians.

[46] Type A Noninterview Adjustment Factor is an adjustment that accounts for library nonrespondents that did not report whether or not they had a library (generally refusals or unable to contact). It is the weighted (basic weight x subsample factor x sampling adjustment factor) ratio of the total of schools reporting to be with and without libraries plus schools which did not report whether or not they had a library to the total of schools with and without libraries. Schools without libraries are ratio adjusted in order to study the characteristics of such schools.

[47] Type B Noninterview Adjustment Factor is an adjustment that accounts for school nonrespondents that reported having a library. It is the weighted (basic weight x subsample factor x sampling adjustment factor) ratio of the total eligible in-scope libraries (schools with libraries interviewed plus not interviewed) to the total interviewed schools with libraries.

For private school libraries from the area frame, the noninterview adjustment cells (for both Types A and B) were school level. If the factor was less than 2.0 and there were at least 15 schools in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided in Table 3.2.4.

Table 3.2.4 -- Nonresponse adjustment procedures for the Private School Library and Librarian Surveys.

	Private list frame	Private area frame
	Adjustment cells: 3-level typology by school level by urbanicity by school size	Adjustment cells: school level
	Collapsing order: school size urbanicity school level 3-level typology	Collapsing order: school level

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation,* NCES 96-089.

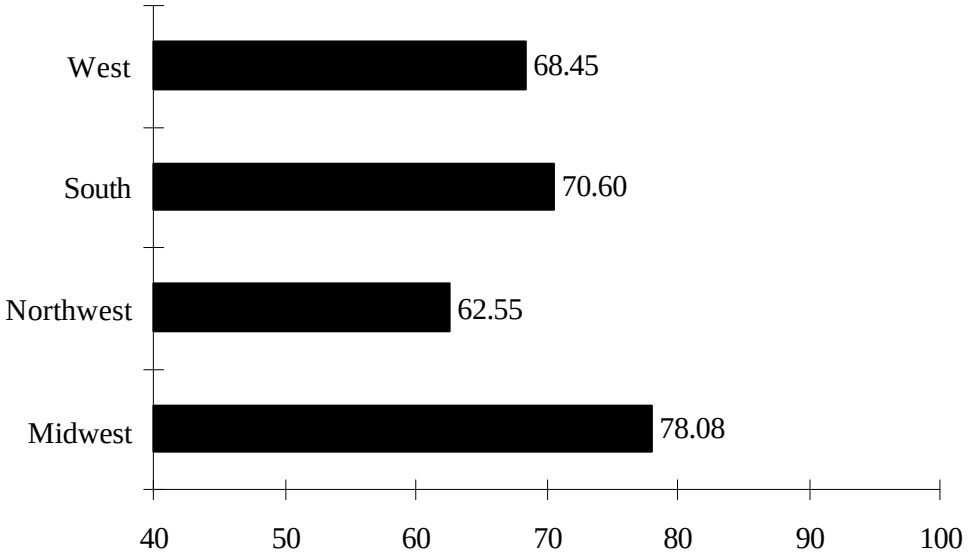
Private School Library Response Rates: 1993-94

The in-scope sample size for the 1993-94 SASS Private School Library/Media Center Component was 2,067 with an overall response rate of 70.70 percent.

Region response rates differed by almost 16 percentage points from a high in the Midwest of 78.08 percent to a low in the Northeast of 62.55 percent (Figure 3.2.6).

Figure 3.2.6 -- Region response rates: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

The greatest difference in **typology** response rates is over 20 percentage points with Catholic the highest at 81.80 percent and other religious the lowest at 59.16 percent (Table 3.2.5).

Table 3.2.5 -- Weighted 3-level typology response rates: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates in percent)

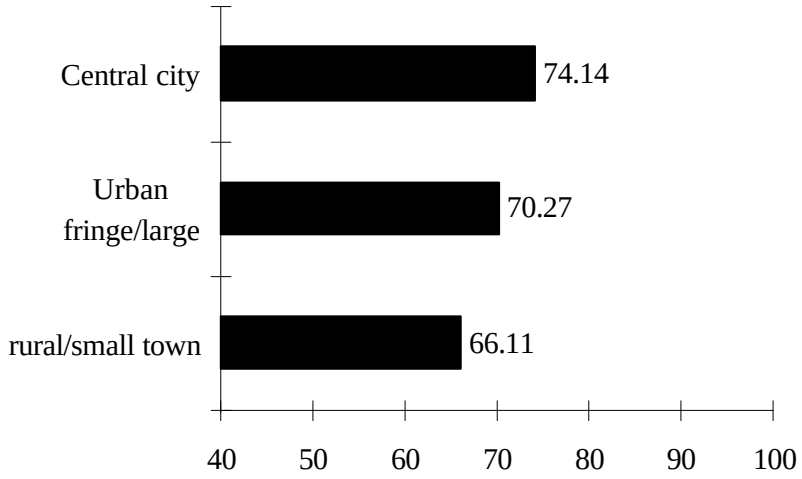
3-level typology	Response rate
Catholic	81.80
Other Religious	59.16
Non-sectarian	70.34

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

For response rates by **urbanicity**, libraries in central city schools were the highest at 74.14 percent, followed by libraries in urban fringe/large town schools at 70.27 percent and libraries in rural/small town schools at 66.11 percent (Figure 3.2.7).

Figure 3.2.7 -- Urbanicity response rates: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates in percent)

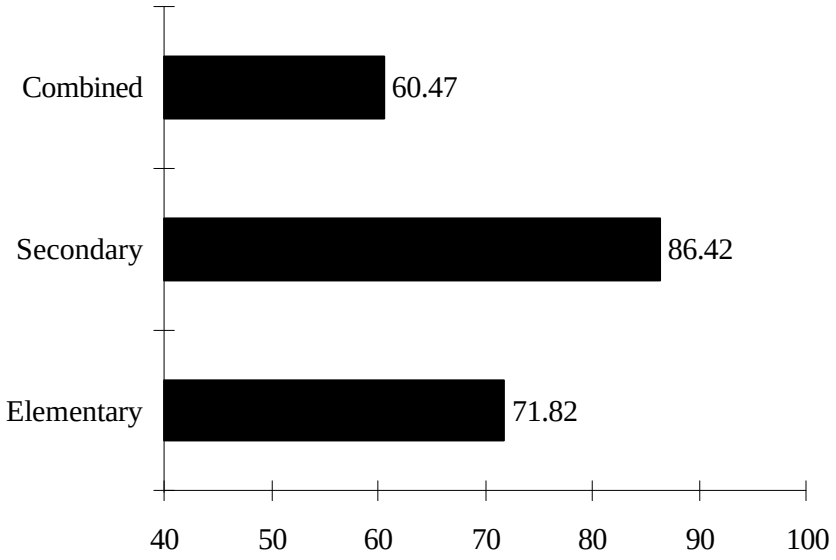


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

The range of response rates for **school level** was almost 26 percentage points. Libraries in secondary schools had the highest response rate at 86.42 percent, followed by libraries in elementary schools at 71.82 percent, and then libraries in combined schools at 60.47 percent (Figure 3.2.8).

Figure 3.2.8 -- School level response rates: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates in percent)

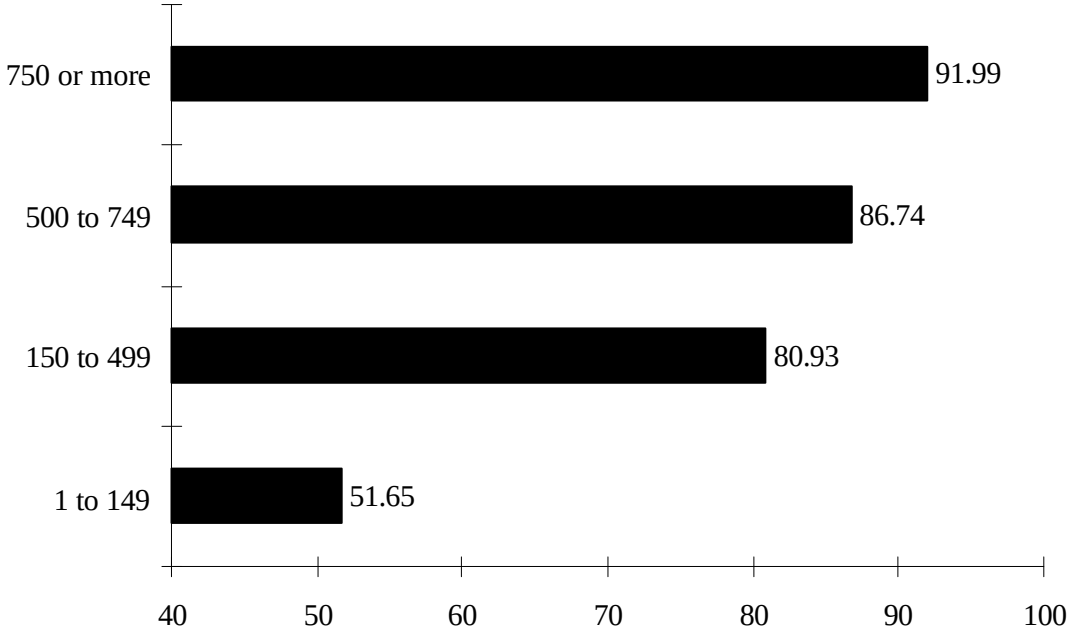


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

School size response rates had a range of almost 41 percentage points. Libraries in schools with 750 or more students had the highest response rate at 91.99 percent, followed by libraries in schools with 500 to 749 students at 86.74 percent, libraries in schools with 150 to 499 students at 80.93 percent, and libraries in schools with 1 to 149 students at 51.65 percent (Figure 3.2.9).

Figure 3.2.9 -- School size response rates: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Private School Library Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of six school characteristics. The school characteristics[48] were:

1. Urbanicity
2. Region
3. School level
4. School size
5. School sampled in 1990-91 SASS
6. 1991-92 PSS[49] status

Table 3.2.6 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for "rural/small town" schools, the response rate was 66.11 percent with a standard error of 2.236 and a sample size of 414. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following five had significant association with response status at the α=0.05 level:

1. Region
2. School level
3. School size
4. School sampled in 1990-91 SASS
5. 1991-92 PSS status

The association of response status with the remaining characteristic -- urbanicity -- was not significant at the α=0.05 level.

[48] The definitions for these characteristics can be found in the Glossary at the end of this report.
[49] Private School Survey (PSS)

Table 3.2.6 -- Significance test results: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	66.11	2.236	414
Urban fringe/large town	70.27	2.829	764
Central city	74.14	1.565	889
Rao-Scott3 statistic: 5.3962 P-value: 0.0530			
Region			
Midwest	78.08	1.883	586
Northeast	62.55	3.057	556
South	70.60	2.305	590
West	68.45	3.458	335
Rao-Scott3 statistic: 18.2269 P-value: **0.0003**			
School level			
Elementary	71.82	1.630	1,068
Secondary	86.42	1.832	457
Combined	60.47	2.025	542
Rao-Scott3 statistic: 67.0881 P-value: **0.0000**			
School size			
1 to 149 students	51.65	2.414	528
150 to 499 students	80.93	1.248	1,139
500 to 749 students	86.74	1.891	230
750 or more students	91.99	1.746	170
Rao-Scott3 statistic: 177.1821 P-value: **0.0000**			
School sampled in 1990-91 SASS			
Yes	81.03	1.899	512
No	68.07	1.540	1,555
Rao-Scott3 statistic: 26.6275 P-value: **0.0000**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

Table 3.2.6 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
1991-92 PSS* status			
Respondent	72.32	1.335	1,946
Nonrespondent	39.33	7.740	36
Not in 1991-92 PSS	51.07	7.001	85
Rao-Scott3 statistic: 19.3353	P-value: **0.0001**		

*Private School Survey (PSS)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

3.3 SASS Librarian Component

The **Library Survey** consisted of two parts -- one on the library and media equipment and services available to the students and the other on the qualifications and working conditions of the school library media specialist/librarian.[50]

A **library media specialist** questionnaire was sent to the person who is responsible for the school's library media center. Library media specialists are sometimes referred to as librarians. A library media specialist sample case was considered out-of-scope if the school's library did not have a librarian or if the librarian was not a staff member whose primary assignment was to perform the duties of a library media specialist. This excludes teachers, volunteers, and other staff members.

3.3.1 Public School Librarian Component

Sample Design

The sample design for the public administrator component is the same as that used in the public school component (Section 3.2.1).

Nonresponse Adjustment Factors

The nonresponse adjustment cells for the public administrator component are the same as those used in the public school component (Section 3.2.1).

[50] U.S. Department of Education, National Center for Education Statistics (1994),*SASS and PSS Questionnaires 1993-94*, NCES 94-674.

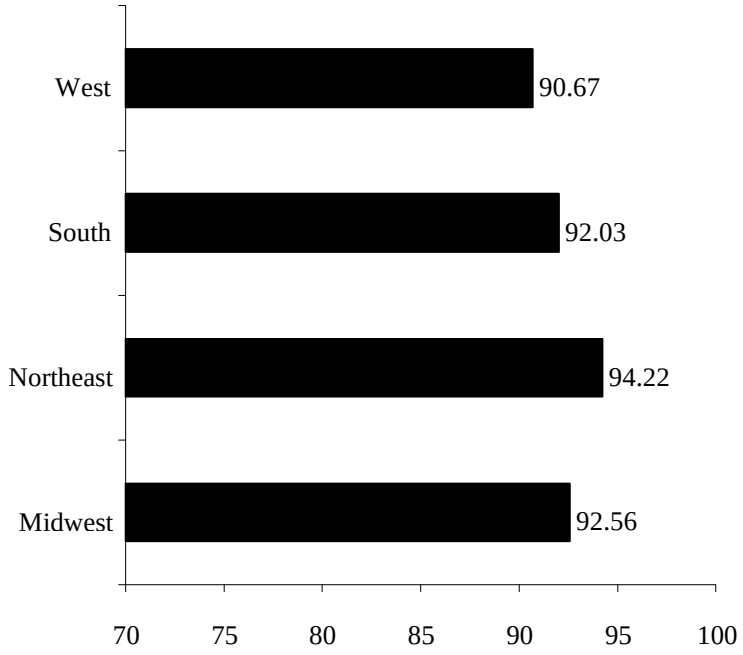
Public School Librarian Response Rates: 1993-94

The in-scope sample size for the 1993-94 SASS Public School Librarian Component was 4,175 with an overall response rate of 92.30 percent.

Region response rates differed by less than four percentage points from a high in the Northeast of 94.22 percent to a low in the West of 90.67 percent (Figure 3.3.1).

Figure 3.3.1 -- Region response rates: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

The greatest difference in **state** level response rates is almost 19 percentage points with Alaska the lowest at 80.79 percent and Pennsylvania the highest at 99.46 percent (Table 3.3.1). As to the location of the 10 best responding **states**, the Midwest had five of the ten best responding states, followed by the Northeast and South with two each, and the West with one (Table 3.3.1). For the lowest responding states, the Midwest, South, and West had three apiece, while the Northeast had one.

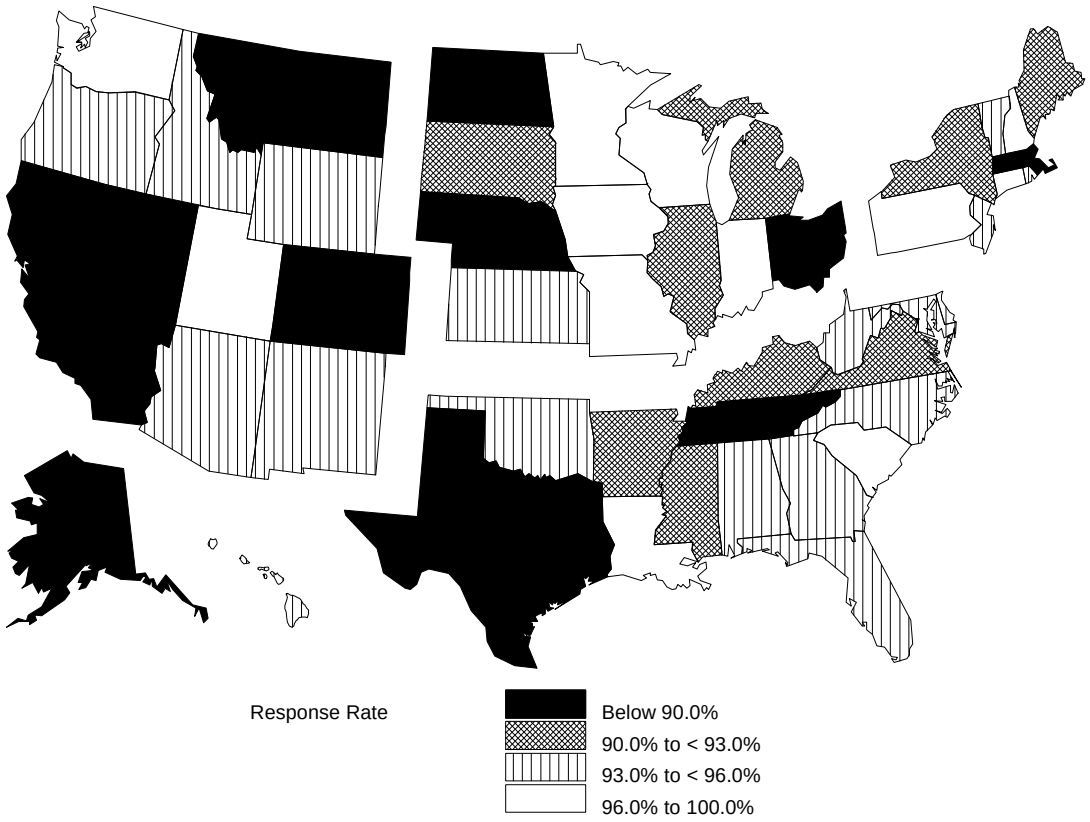
Table 3.3.1 -- Ten highest and lowest weighted response rates by state: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates in percent)

	Highest			Lowest	
State	**Region**	**response rate**	**State**	**Region**	**response rate**
Pennsylvania	Northeast	99.46	Alaska	West	80.79
New Hampshire	Northeast	98.22	Nebraska	Midwest	84.84
Louisiana	South	97.88	Ohio	Midwest	85.55
South Carolina	South	97.50	District of Columbia	South	86.13
Indiana	Midwest	97.43	Tennessee	South	86.29
Minnesota	Midwest	97.07	Colorado	West	87.08
Washington	West	96.77	Texas	South	87.18
Wisconsin	Midwest	96.41	California	West	87.51
Iowa	Midwest	96.39	North Dakota	Midwest	87.62
Missouri	Midwest	96.22	Massachusetts	Northeast	88.54

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Librarian Questionnaires).

Figure 3.3.2 -- Weighted response rates for Public Schools: Schools and Staffing Survey 1993-94, Public School Librarian Component.



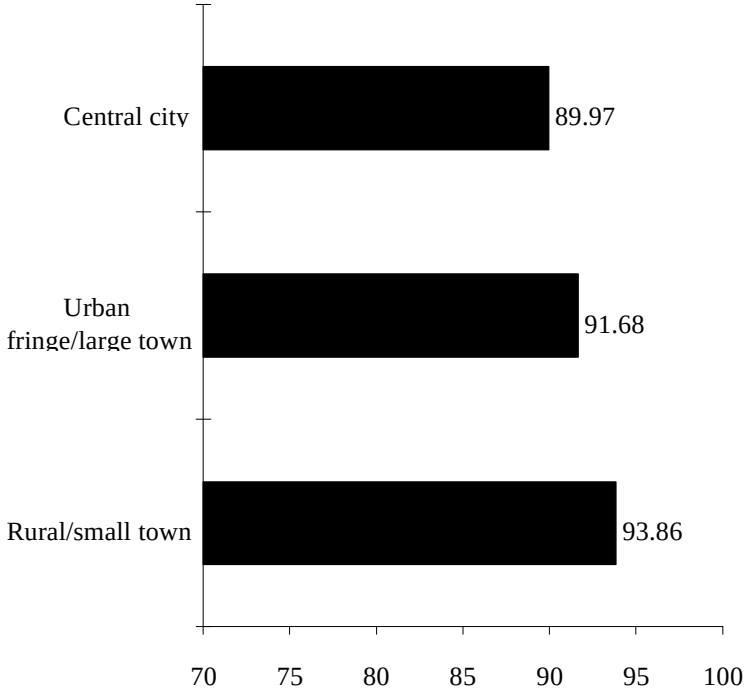
NOTE: The District of Columbia, at 86.13 percent, has not been shown separately.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

For response rates by **urbanicity**, librarians in rural/small town schools were the highest at 93.86 percent, followed by librarians in urban fringe/large town schools at 91.68 percent and librarians in central city schools at 89.97 percent (Figure 3.3.3).

Figure 3.3.3 -- Urbanicity response rates: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates in percent)

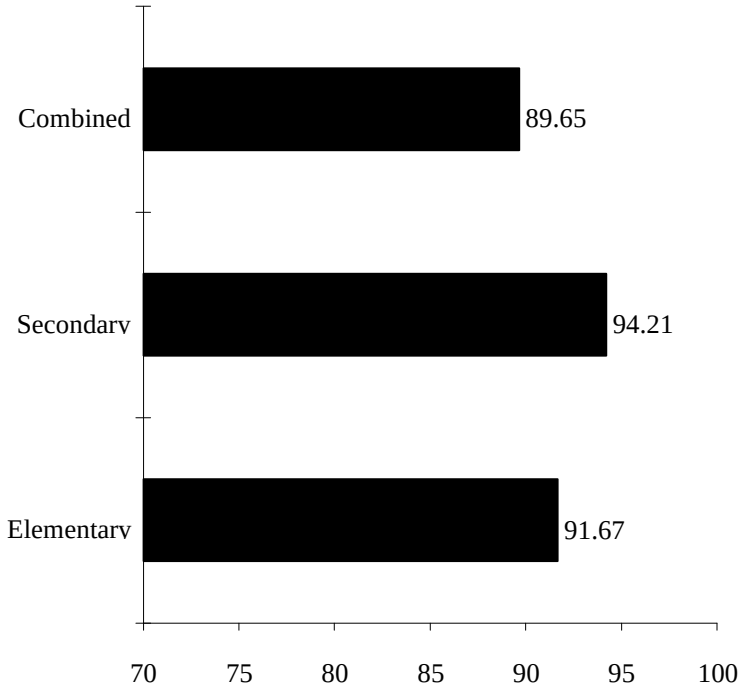


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

The range of response rates for **school level** was less than five percentage points. Librarians in secondary schools had the highest response rate at 94.21 percent, followed by librarians in elementary schools at 91.67 percent and then librarians in combined schools at 89.65 percent (Figure 3.3.4).

Figure 3.3.4 -- School level response rates: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates in percent)

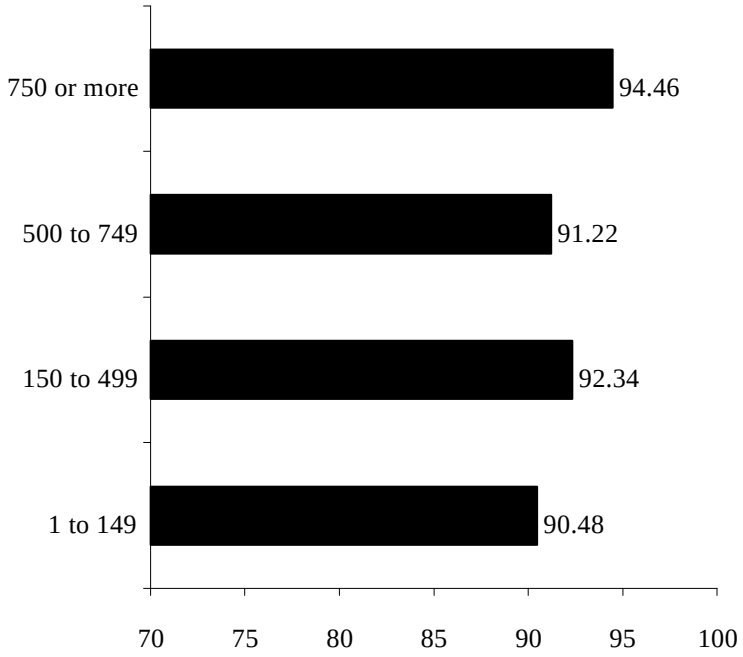


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

School size response rates had a range of just under four percentage points. Librarians in schools with 750 or more students had the highest response rate at 94.46 percent, followed by librarians in schools with 150 to 499 students at 92.34 percent, librarians in schools with 500 to 749 students at 91.22 percent, and librarians in schools with 1 to 149 students at 90.48 percent (Figure 3.3.5).

Figure 3.3.5 -- School size response rates: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Public School Librarian Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of seven school characteristics. The school characteristics[51] were:

1. Urbanicity
2. Region
3. Minority enrollment
4. School level
5. School size
6. School type
7. School sampled in 1990-91 SASS

Table 3.3.2 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for schools with a minority enrollment of "less than 5.5%," the response rate was 93.36 percent with a standard error of 1.085 and a sample size of 1,606. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, three had a significant association with response status at the α=0.05 level:

1. Urbanicity
2. Minority enrollment
3. School level

The association of response rates with the remaining four characteristics -- region, school size, school type, and school sampled in 1990-91 SASS -- were not significant at the α=0.05 level.

[51] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 3.3.2 -- Significance test results: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	93.86	0.909	2,089
Urban fringe/large town	91.68	1.290	1,069
Central city	89.97	1.171	1,017
Rao-Scott3 statistic: 6.5789	P-value: **0.0356**		
Region			
Midwest	92.56	1.161	921
Northeast	94.22	1.302	695
South	92.03	0.992	1,561
West	90.67	1.287	998
Rao-Scott3 statistic: 3.8736	P-value: 0.2627		
Minority enrollment			
Less than 5.5%	93.36	1.085	1,606
5.5 - 20.5%	94.37	1.059	915
20.5 - 50.5%	92.33	1.291	820
Greater than 50.5%	88.11	1.598	834
Rao-Scott3 statistic: 10.4539	P-value: **0.0078**		
School level			
Elementary	91.67	0.879	1,920
Secondary	94.21	0.631	1,874
Combined	89.65	1.224	381
Rao-Scott3 statistic: 7.3227	P-value: **0.0112**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

Table 3.3.2 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School size			
1 to 149 students	90.48	1.934	313
150 to 499 students	92.34	0.936	1,519
500 to 749 students	91.22	1.311	1,046
750 or more students	94.46	0.889	1,297
Rao-Scott3 statistic: 4.2825	P-value: 0.1715		
School type			
Non-regular	85.87	4.132	111
Regular	92.39	0.665	4,064
Rao-Scott3 statistic: 2.6530	P-value: 0.1034		
School sampled in 1990-91 SASS			
Yes	91.43	1.357	1,280
No	92.68	0.842	2,895
Rao-Scott3 statistic: 0.5395	P-value: 0.4626		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

3.3.2 Private School Librarian Component

Sample Design

The sample design for the public administrator component is the same as that used in the public school component (Section 3.2.2).

Nonresponse Adjustment Factors

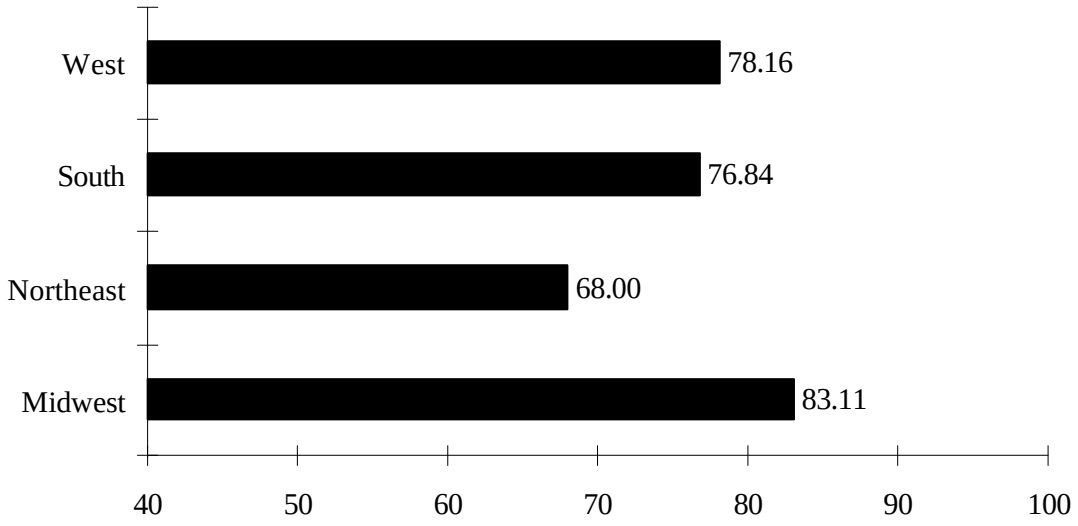
The nonresponse adjustment cells for the public administrator component are the same as those used in the public school component (Section 3.2.2).

Private School Librarian Response Rates: 1993-94

The in-scope sample size for the 1993-94 SASS Private School Library/Media Center Component was 1,356 with an overall response rate of 76.50 percent. **Region** response rates differed by just over 15 percentage points from a high in the Midwest of 83.11 percent to a low in the Northeast of 68.00 percent (Figure 3.3.6).

Figure 3.3.6 -- Region response rates: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

The greatest difference in **typology** response rates is over 27 percentage points with the Non-sectarian the highest at 87.25 percent and the Other Religious schools the lowest at 57.95 percent (Table 3.3.3).

Table 3.3.3 – Weighted 3-level typology response rates: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates in percent)

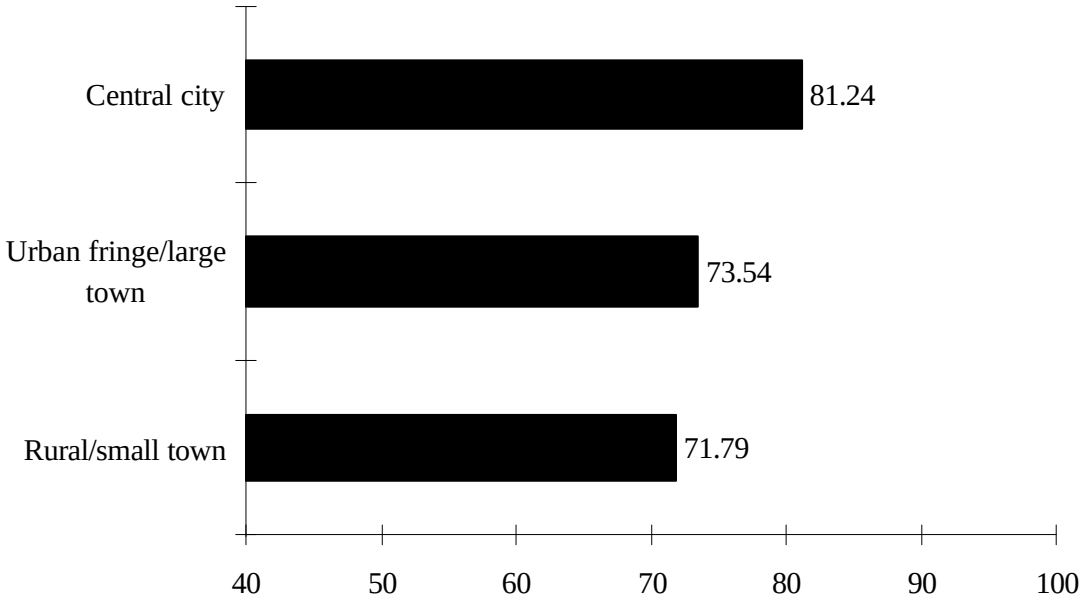
3-level typology	Response rate
Catholic	85.63
Other Religious	57.95
Non-sectarian	87.25

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

For response rates by **urbanicity**, librarians in central city schools were the highest at 81.24 percent, followed by librarians in urban fringe/large town schools at 73.54 percent and librarians in rural/small town schools at 71.79 percent (Figure 3.3.7).

Figure 3.3.7 -- Urbanicity response rates: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates in percent)

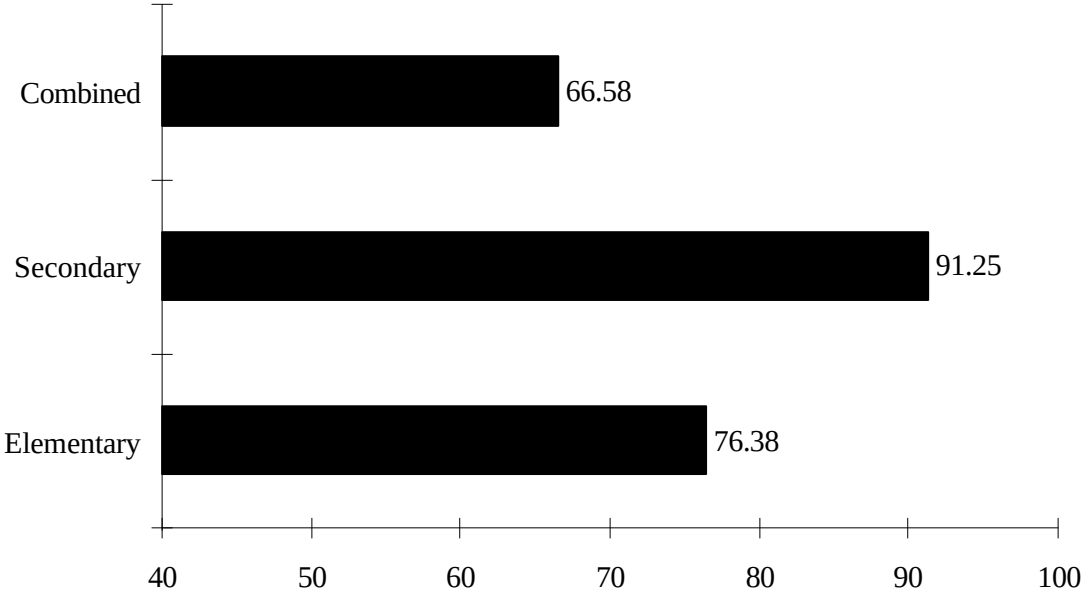


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

The range of response rates for **school level** was almost 25 percentage points. Librarians in secondary schools had the highest response rate at 91.25 percent, followed by librarians in elementary schools at 76.38 percent and then librarians in combined schools at 66.58 percent (Figure 3.3.8).

Figure 3.3.8 -- School level response rates: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates in percent)

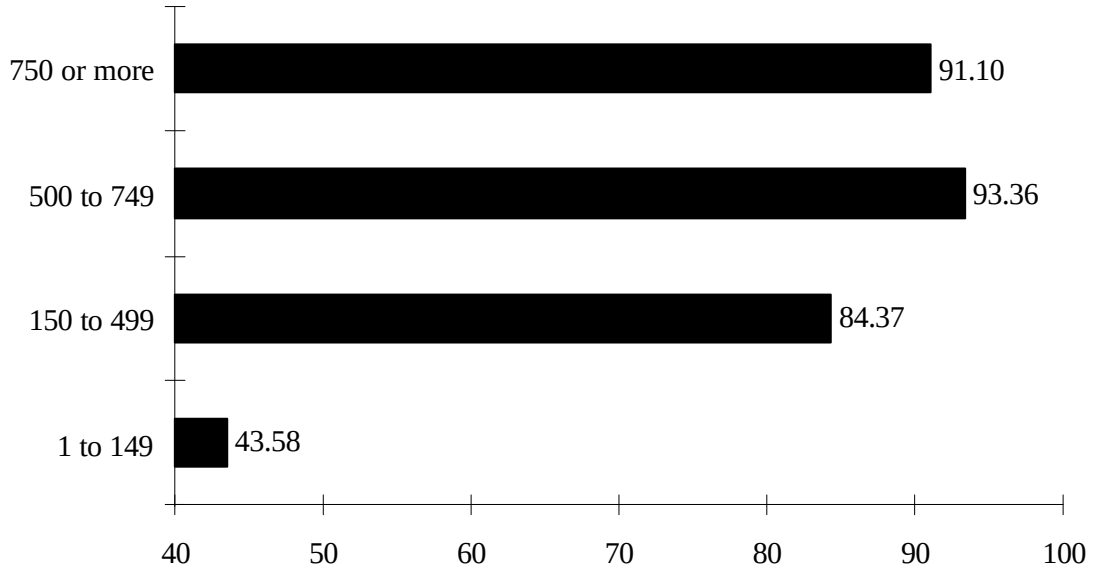


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

School size response rates had a range of almost 50 percentage points. Librarians in schools with 500 to 749 students had the highest response rate at 93.36 percent, followed by librarians in schools with 750 or more students at 91.10 percent, librarians in schools with 150 to 499 students at 84.37 percent, and librarians in schools with 1 to 149 students at 43.58 percent (Figure 3.3.9).

Figure 3.3.9 -- School size response rates: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Private School Librarian Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of six school characteristics. The school characteristics[52] were:

1. Urbanicity
2. Region
3. School level
4. School size
5. School sampled in 1990-91 SASS
6. 1991-92 PSS[53] status

Table 3.3.4 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for "rural/small town" schools, the response rate was 71.79 percent with a standard error of 3.719 and a sample size of 217. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following five had a significant association with response status at the α=0.05 level:

1. Region
2. School level
3. School size
4. School sampled in 1990-91 SASS
5. 1991-92 PSS status

The association of response status with the remaining characteristic -- urbanicity -- was not significant at the α=0.05 level.

[52] The definitions for these characteristics can be found in the Glossary at the end of this report.
[53] Private School Survey (PSS)

Table 3.3.4 -- Significance test results: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	71.79	3.719	217
Urban fringe/large town	73.54	3.579	532
Central city	81.24	1.684	607
Rao-Scott3 statistic: 4.9769	P-value: 0.0606		
Region			
Midwest	83.11	2.244	338
Northeast	68.00	3.943	393
South	76.84	2.548	425
West	78.16	3.827	200
Rao-Scott3 statistic: 12.7355	P-value: **0.0039**		
School level			
Elementary	76.38	2.205	569
Secondary	91.25	1.348	389
Combined	66.58	3.299	398
Rao-Scott3 statistic: 30.3634	P-value: **0.0000**		
School size			
1 to 149 students	43.58	5.294	173
150 to 499 students	84.37	1.292	812
500 to 749 students	93.36	1.781	207
750 or more students	91.10	1.888	164
Rao-Scott3 statistic: 51.0965	P-value: **0.0000**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

Table 3.3.4 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled in 1990-91 SASS			
Yes	84.38	2.216	360
No	74.16	2.232	996
Rao-Scott3 statistic: 10.6142	P-value: **0.0011**		
1991-92 PSS* status			
Respondent	79.22	1.772	1,283
Nonrespondent	31.49	8.817	27
Not in 1991-92 PSS	44.75	8.128	46
Rao-Scott3 statistic: 18.3844	P-value: **0.0001**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

3.4 SASS Student Record Component[54]

The **Student Records Survey** gathered information about a student which could be answered by a school administrator using the student's school records. The survey requested information on the types of services students receive, the types of math and science courses they are enrolled in, and the relationships between students and their schools and teachers.[55]

A **student records** questionnaire was sent to the school administrator or another contact at the sample school for each student in the sample. A student was considered out-of-scope if he/she dropped out, transferred to another school, withdrew, was expelled, was chronically truant, or died.

Sample Design

Selecting students for the public, private, and BIA student record surveys involved the same three basic steps:

1. A subsample of schools from the school sample was selected;
2. From the subsample of schools approximately three teachers were selected (the teachers were subsampled from the teachers selected for the teacher survey); and
3. Approximately two students were selected from each sampled teacher.

Steps two and three are the same for both the public and the private student record surveys. However, the public and private student record surveys do differ on step one. The rest of this section gives a more detailed discussion for the student sample.

For the Public Student Record Survey schools were selected from the 1993-94 public school sample. BIA schools, Native American Indians schools, and schools in Alaska were each put into a separate stratum and sampled with certainty. The remaining schools were then stratified by school level and Metropolitan Statistical Area (see Glossary for definitions). Within the noncertainty strata, schools were systematically selected using a probability proportionate to size algorithm. The measure of size used for the schools on the CCD was the square root of the number of teachers in the school as reported on the CCD file times the school's basic weight (the inverse of the school's probability of selection in the school sampling). Any school with a measure of size larger than the sampling interval was excluded from the probability sampling operation and included in sample with certainty.

For the Private Student Record Survey schools were selected from the 1993-94 private school sample. The schools were then stratified by association and school level (see Glossary for definitions). Within each stratum, schools were systematically selected using a probability proportionate to size algorithm. The measure of size used was the school's measure of size times the school's basic weight (the inverse of the school's probability of selection). Any school with a

[54] The sample design information is from Abramson et al. (1996),*1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.
[55] U.S. Department of Education, National Center for Education Statistics (1994), SASS and PSS Questionnaires 1993-94, NCES 94-764.

measure of size larger than the sampling interval was excluded from the probability sampling process and included in the sample with certainty.

The subsampling of teachers from the public, BIA, and private school subsample was the same. All sampled teachers in the subsample of schools were eligible for the student survey. Within each school, a subsample of three teachers was selected for the student survey. If a school had less than three sample teachers, all sample teachers from the school were selected.

The student selection procedure was carried out over the telephone through contact with a representative from each school. The first step of the student selection procedure was to determine if the teacher was ineligible; teachers that did not teach regularly scheduled classes were considered ineligible.[56] In step two teachers were classified as self-contained (i.e., the teacher teaches the same group of students most of the day) or departmental. A class roster was then requested and then two students were selected systematically.

Nonresponse Adjustment Factors

The success of adjustments for unit nonresponse in reducing bias depends on the extent to which the characteristics of units that respond and do not respond are similar. Nonresponse adjustment procedures for the 1993-94 SASS are at the macro-level and take into account the sampling design and sample allocation methodology for SASS. The choice of variables rests on the implicit premise that they covary with nonresponse.

For public schools, the school nonresponse adjustment[57] cells were the same as those used for the school noninterview adjustment cells in the school weight. The collapsing criteria were also the same as those used in the school noninterview adjustment in the school weight.

The misclassified teacher adjustment[58] cells were: teacher main subject by region for regular public schools, teacher main subject by state for Native American schools, and just teacher main subject for BIA schools. If collapsing occurred, teacher subject collapsed.

The student noninterview adjustment[59] cells were state by school level by school size by teacher status. If the factor was less than 1.5 and there were at least 15 students in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided by Table 3.4.1.

[56] Royce (1996), "Results from the 1994 Student Survey Reinterview - Certainty Teacher Edit and Reconciliation," Internal Bureau of the Census memorandum for the record, February 27. Waite (1996), "Results from the 1994 Student Survey - Certainty Teacher Edit and Reconciliation." Internal Bureau of the Census memorandum for the record, March 21.

[57] School Nonresponse Adjustment Factor is an adjustment that accounts for schools that did not have students selected because the school did not participate in either the teacher or student sampling procedures. It is the weighted (school basic weight x school sampling adjustment factor x school's student subsampling factor) ratio of total eligible in-scope schools to the total in-scope schools with sample students, computed within cells.

[58] Misclassified Teacher Adjustment Factor is an adjustment that accounts for sampled teachers reported to not be teaching regularly scheduled classes during student sampling, but later reported to be teaching in the Teacher Survey.

For private schools, the school nonresponse adjustment cells were the same as those used for the school noninterview adjustment cells in the school weight, and the collapsing criteria were also the same.

The misclassified teacher adjustment cells were teacher main subject by 3-level typology. Otherwise, cells were collapsed in the order provided by Table 3.4.1.

The student noninterview adjustment cells were affiliation by enrollment by teacher status. If the factor was less than 1.5 and there were at least 15 students in the cell, no collapsing was done. Otherwise, cells were collapsed in the order provided by Table 3.4.1.

[59] Student Noninterview Adjustment Factor is an adjustment that accounts for sampled students whose schools did not return questionnaires at all or returned incomplete questionnaires. It is the weighted (product of all previously defined components) ratio of the total eligible students to the total eligible responding students computed within cells.

Table 3.4.1 -- Nonresponse adjustment procedures for Student Surveys.

	Public schools	Private schools
School nonresponse	Adjustment cells: state by school level by school size by urbanicity	Adjustment cells: association by school level by school size by urbanicity*
	Collapsing order: school size urbanicity school level	Collapsing order: school size urbanicity* school level association
Misclassified teacher	Adjustment cells: teacher main subject by region	Adjustment cells: teacher main subject 3-level typology
	Collapsing order: teacher main subject	Collapsing order: teacher main subject 3-level typology
Student noninterview	Adjustment cells: state by school level by school size by teacher status**	Adjustment cells: association by school size by teacher status**
	Collapsing order: teacher status** school size school level state	Collapsing order: teacher status** school size school level

* For Catholic and All Else Associations only.
** Self-contained (i.e., the teacher teaches the same group of students most of the day) or departmental.

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

3.4.1 Public School Student Record Component

Public School Student Record Response Rates: 1993-94

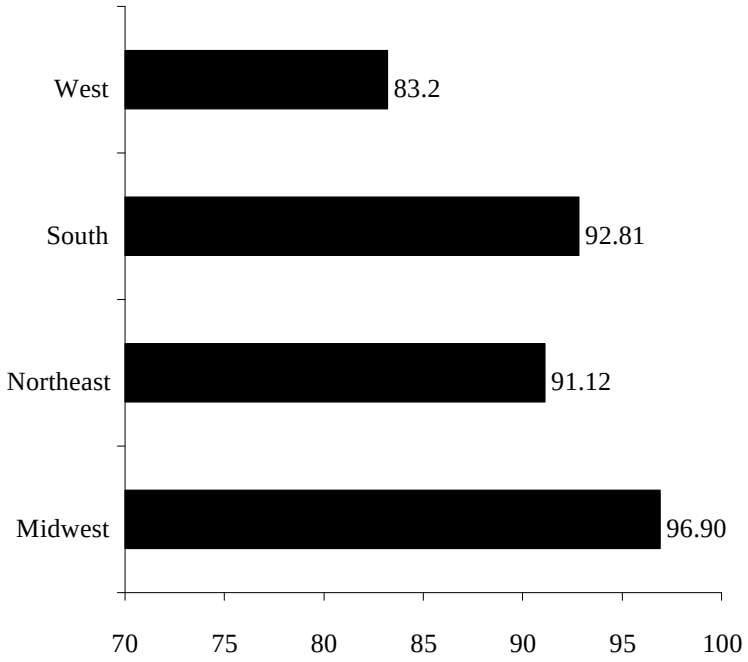
Please note, in this section the weighted response rate is used which does not include nonresponse due to a school not supplying a teacher list. It also does not include nonresponse due to the school's nonparticipation in the student sampling.

The in-scope sample size for the 1993-94 SASS Public School Student Record Component was 5,577 with an overall response rate of 91.31 percent.

Region response rates differed by over 13 percentage points from a high in the Midwest of 96.90 percent to a low in the West of 83.20 percent (Figure 3.4.1).

Figure 3.4.1 -- Region response rates: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates in percent)

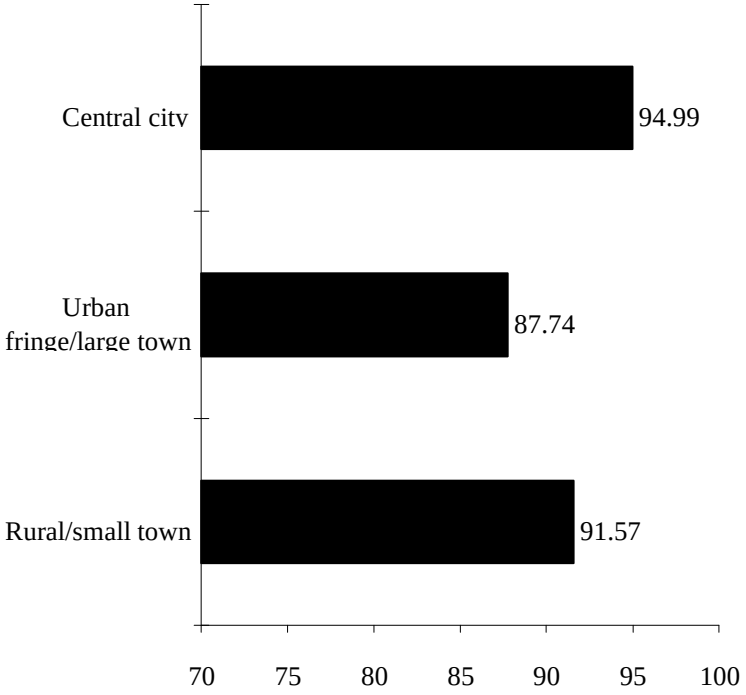


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

For response rates by **urbanicity**, central city schools were the highest at 94.99 percent, followed by rural/small town schools at 91.57 percent and urban fringe/large town schools at 87.74 percent (Figure 3.4.2).

Figure 3.4.2 -- Urbanicity response rates: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates in percent)

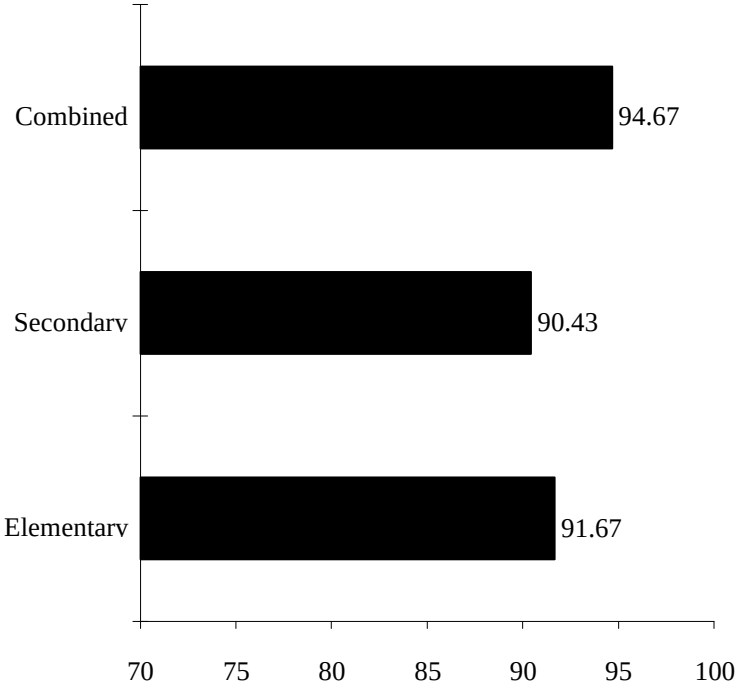


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

The range of response rates for **school level** was exactly three percentage points. Combined schools had the highest response rate at 94.67 percent, followed by elementary schools at 91.67 percent and then secondary schools at 90.43 percent (Figure 3.4.3).

Figure 3.4.3 -- School level response rates: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates in percent)

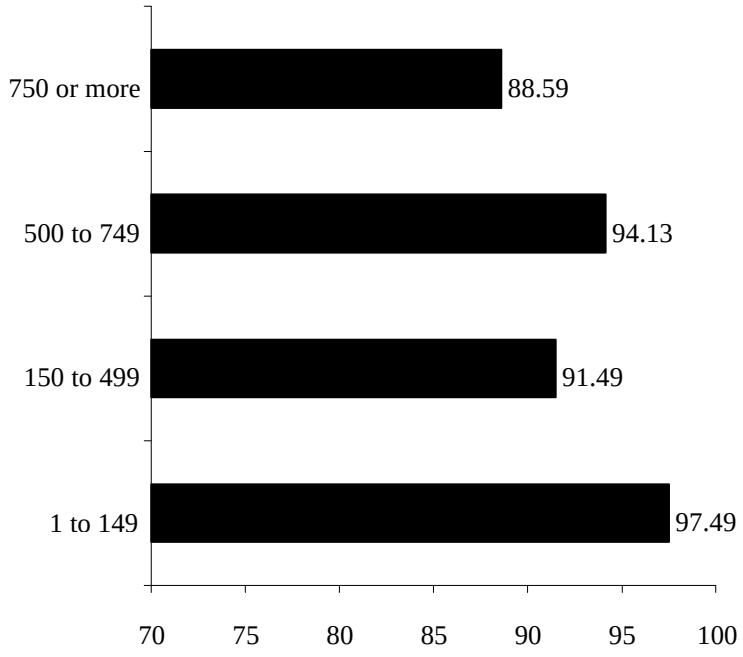


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

School size response rates had a range of just under nine percentage points. Schools with 1 to 149 students had the highest response rate at 97.49 percent, followed by schools with 500 to 749 students at 94.13 percent, schools with 150 to 499 students at 91.49 percent, and schools with 750 or more students at 88.59 percent (Figure 3.4.4).

Figure 3.4.4 -- School size response rates: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Public School Student Record Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of eight school characteristics. The school characteristics[60] were:

1. School sampled with certainty
2. Urbanicity
3. Region
4. Minority enrollment
5. School level
6. School size
7. School type
8. School sampled in 1990-91 SASS

Table 3.4.2 briefly indicates the response categories of these variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for schools with a minority enrollment of "less than 5.5%," the response rate was 93.31 percent with a standard error of 1.839 and a sample size of 1,120. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, only region a had significant association with response status at the α=0.05 level. The association of response status with the remaining seven variables -- school sampled with certainty, urbanicity, percent minority enrollment, school level, school size, school type, and school sampled in 1990-91 SASS -- were not significant at theα=0.05 level.

[60] The definitions for these characteristics can be found in the Glossary at the end of this report.

Table 3.4.2 -- Significance test results: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled with certainty			
Yes	96.13	2.754	721
No	91.24	1.303	4,856
Rao-Scott3 statistic: 1.7063	P-value: 0.1915		
Urbanicity			
Rural/small town	91.57	1.725	4,091
Urban fringe/large town	87.74	2.855	748
Central city	94.99	1.938	738
Rao-Scott3 statistic: 4.8845	P-value: 0.0767		
Region			
Midwest	96.90	1.210	1,027
Northeast	91.12	2.731	409
South	92.81	1.992	2,023
West	83.20	3.704	2,118
Rao-Scott3 statistic: 11.9115	P-value: **0.0035**		
Percent minority enrollment			
Less than 5.5%	93.31	1.839	1,120
5.5 - 20.5%	88.85	3.661	771
20.5 - 50.5%	91.52	2.706	1,940
Greater than 50.5%	90.70	1.961	1,746
Rao-Scott3 statistic: 1.4534	P-value: 0.6119		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

Table 3.4.2 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School level			
Combined	94.67	2.029	778
Elementary	91.67	1.672	2,747
Secondary	90.43	2.074	2,052
Rao-Scott3 statistic: 0.4084 P-value: 0.5812			
School size			
1 to 149 students	97.49	1.494	1,070
150 to 499 students	91.49	1.951	2,548
500 to 749 students	94.13	2.387	982
750 or more students	88.59	3.140	977
Rao-Scott3 statistic: 2.4543 P-value: 0.2715			
School type			
Non-regular	95.65	5.240	206
Regular	91.21	1.314	5,371
Rao-Scott3 statistic: 0.7051 P-value: 0.4023			
School sampled in 1990-91 SASS			
Yes	90.01	3.341	1,663
No	91.80	1.568	3,914
Rao-Scott3 statistic: 0.2055 P-value: 0.6503			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

3.4.2 Private School Student Record Component

Private School Student Record Component Response Rates: 1993-94

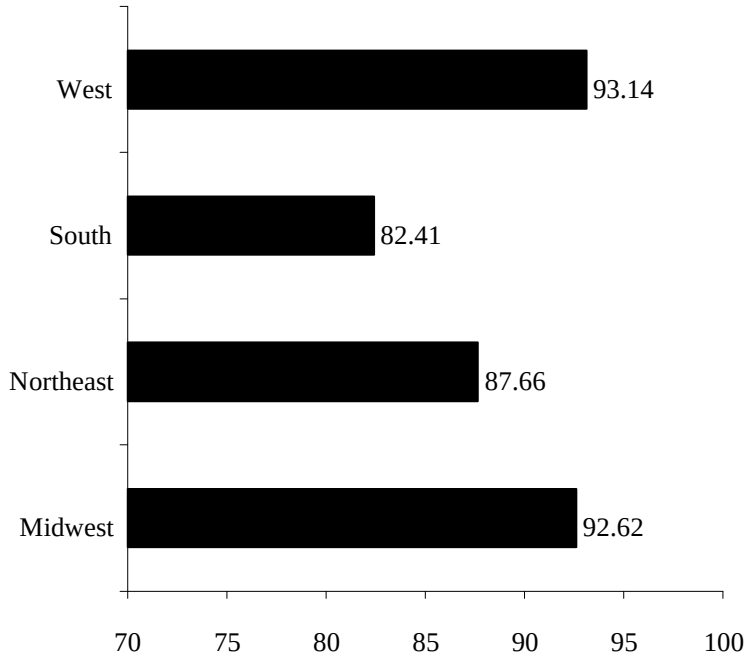
Please note, in this section the weighted response rate used does not include nonresponse due to a school not supplying a teacher list. It also does not include nonresponse due to the school's nonparticipation in the student sampling.

The in-scope sample size for the 1993-94 SASS Private School Student Record Component was 1,371 with an overall response rate of 88.05 percent.

Region response rates differed by almost 11 percentage points from a high in the West of 93.14 percent to a low in the South of 82.41 percent (Figure 3.4.5).

Figure 3.4.5 -- Region response rates: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates in percent)

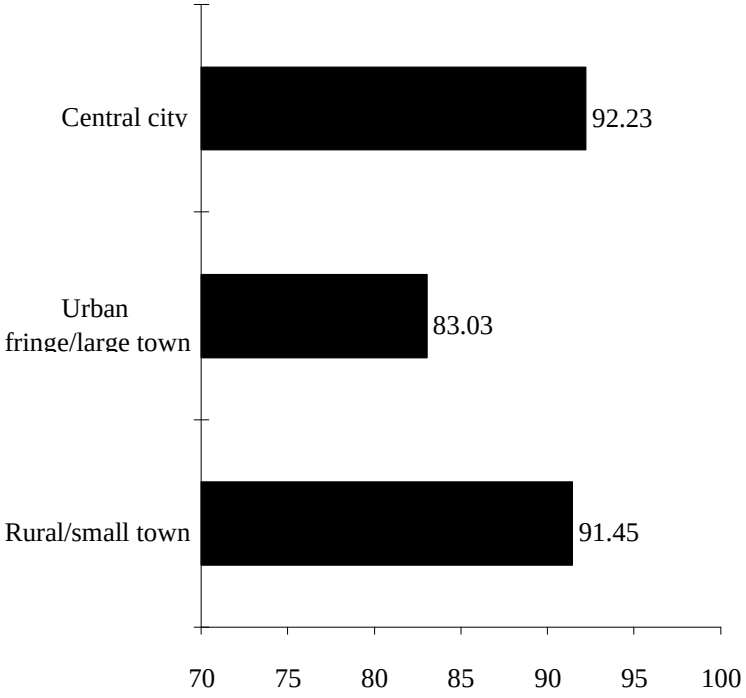


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

For response rates by **urbanicity**, central city schools were the highest at 92.23 percent, followed by rural/small town schools at 91.45 percent and urban fringe/large town schools at 83.03 percent (Figure 3.4.6).

Figure 3.4.6 -- Urbanicity response rates: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates in percent)

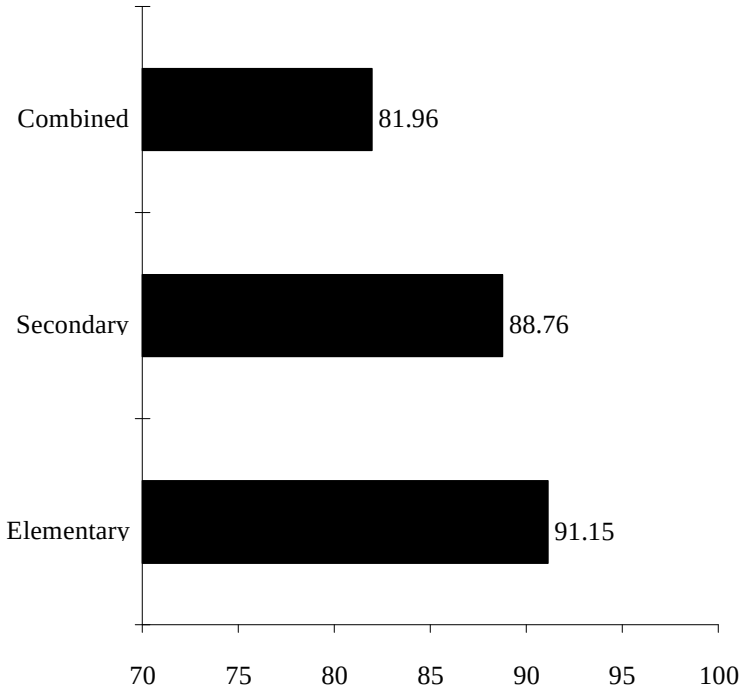


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

The range of response rates for **school level** was just over nine percentage points. Elementary schools had the highest response rate at 91.15 percent, followed by secondary schools at 88.76 percent and then combined schools at 81.96 percent (Figure 3.4.7).

Figure 3.4.7 -- School level response rates: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates in percent)

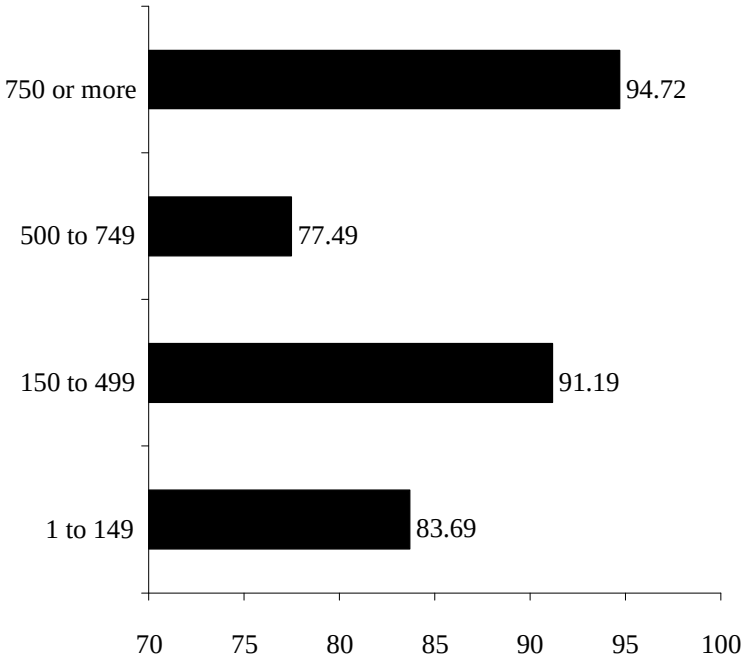


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

School size response rates had a range of just over 17 percentage points. Schools with 750 or more students had the highest response rate at 94.72 percent, followed by schools with 150 to 499 students at 91.19 percent, schools with 1 to 149 students at 83.69 percent, and schools with 500 to 749 students at 77.49 percent (Figure 3.4.8).

Figure 3.4.8 -- School size response rates: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates in percent)



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

Associations between Response Status and School Characteristics for the SASS 1993-94 Private School Student Record Component

Tests were conducted to ascertain whether there was a significant difference between response status and each of seven school characteristics. The school characteristics[61] were:

1. Urbanicity
2. Region
3. School level
4. School size
5. School sampled in 1990-91 SASS
6. 1991-92 PSS[62] status
7. 3-level typology

Table 3.4.3 briefly indicates the response categories ofthese variables and gives response rates, standard errors, and sample sizes for each category of the characteristics examined. For instance, for "rural/small town" schools, the response rate was 91.45 percent with a standard error of 3.174 and a sample size of 337. For each characteristic, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant).

Of these characteristics, the following two had a significant association with responsestatus at the α=0.05 level:

1. School sampled in 1990-91 SASS
2. 3-level typology

The association of response status with the remaining five characteristics -- urbanicity, region, school level, school size, 1991-92 PSS status -- were not significant at theα=0.05 level.

[61] The definitions for these characteristics can be found in the Glossary at the end of this report.
[62] Private School Survey (PSS)

Table 3.4.3 -- Significance test results: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
Urbanicity			
Rural/small town	91.45	3.174	337
Urban fringe/large town	83.03	5.026	535
Central city	92.23	2.252	499
Rao-Scott3 statistic: 3.1128	P-value: 0.1416		
Region			
Midwest	92.62	4.391	352
Northeast	87.66	3.741	356
South	82.41	3.903	403
West	93.14	3.076	260
Rao-Scott3 statistic: 5.0177	P-value: 0.1280		
School level			
Combined	81.96	4.850	393
Elementary	91.15	2.511	715
Secondary	88.76	4.643	263
Rao-Scott3 statistic: 3.9147	P-value: 0.1313		
School size			
1 to 149 students	83.69	4.060	430
150 to 499 students	91.19	2.065	711
500 to 749 students	77.49	8.783	134
750 or more students	94.72	6.251	96
Rao-Scott3 statistic: 4.4291	P-value: 0.1369		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

Table 3.4.3 cont. -- Significance test results: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates and standard errors in percent)

Variable	Response rate	Standard error	Sample size
School sampled in 1990-91 SASS			
Yes	96.07	2.149	229
No	86.34	2.758	1,142
Rao-Scott3 statistic: 5.0102	P-value: **0.0252**		
1991-92 PSS* status			
Respondent	88.78	2.205	1,313
Nonrespondent	83.83	.	14
Not in 1991-92 PSS	60.03	20.719	44
Rao-Scott3 statistic: 1.9644	P-value: 0.1978		
3 level typology			
Catholic	92.69	2.520	486
Other Religious	85.16	4.166	541
Nonsectarian	79.20	5.139	344
Rao-Scott3 statistic: 6.1246	P-value: **0.0412**		

*Private School Survey (PSS)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

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Chapter 4

Summary of Significance Tests

Within the public and private sectors, the results for the significance tests are fairly uniform. That is, if a variable is significant (or not significant) for one component then it is likely significant (or not significant) for the other components.

On the public side (excluding the TDS component) this is the case with the variables **urbanicity**, **minority enrollment**, **submitted a teacher list**, **school size,** and **school sampled in the 1990-91 SASS**. Most of these variables proved to be significant for all public components. On the other hand, the variable **school sampled in the 1990-91 SASS** was not significant for any of the public components. The variable **region** was significant for two of the public components while **school level** was significant for all but three of the public components. **Region** was not significant for the public library and librarian components while **school level** was not significant for the public administrator, teacher, and student record components (Table 4.1).

Table 4.1 -- Public component significance test results: Schools and Staffing Survey 1993-94, Public Administrator, School, Teacher, Library, Librarian, and Student Components.

Component	Administrator	School	Teacher	Library	Librarian	Student
Variable						
Minority enrollment	S	S	S	S	S	NS
New teacher	--	--	S	--	--	--
Region	S	S	S	NS	NS	S
School sampled in the 1990-91 SASS	NS	NS	NS	NS	NS	NS
School level	NS	S	NS	S	S	NS
School size	S	S	S	S	NS	NS
School submitted a teacher list	S	S	--	S	S	--
Urbanicity	S	S	S	S	S	NS

"S" indicates that the variable had a significant association with response rates.
"NS" indicates that the variable did not have a significant association with response rates.
An em-dash (--) indicates not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Administrator, School, Teacher, Library, Librarian, and Student Questionnaires).

As to the private side, similarities in significance test results exist for the variables **region**, **school level**, **school size**, **sampled in the 1990-91 SASS**, **1991-92 PSS[63] response status**, and **school submitted a teacher list**. All of these variables proved to be significant for the majority of the private components. On the significant side, **school sampled in the 1990-91 SASS** proved to be significant for all of the private school components. While **region**, **school level**, **school size**, and **school submitted a teacher list** proved to be significant for all components except the student record component. However, **urbanicity** was only significant for the private teacher component (Table 4.2).

Table 4.2 -- Private component significance test results: Schools and Staffing Survey 1993-94, Private Administrator, School, Teacher, Library, Librarian, and Student Components.

Component	Administrator	School	Teacher	Library	Librarian	Student
Variable						
New teacher	--	--	NS	--	--	--
1991-92 PSS* response status	S	S	S	S	S	NS
Region	S	S	S	S	S	NS
School sampled in the 1990-91 SASS	S	S	S	S	S	S
School level	S	S	S	S	S	NS
School size	S	S	S	S	S	NS
School submitted a teacher list	S	S	--	S	S	--
Urbanicity	NS	NS	S	NS	NS	NS

*Private School Survey (PSS).
"S" indicates that the variable had a significant association with response rates.
"NS" indicates that the variable did not have a significant association with response rates.
An em-dash (--) indicates not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private Administrator, School, Teacher, Library, Librarian, and Student Questionnaires).

There are some interesting differences if the results of the significance tests are viewed across the survey components. The biggest difference is found when comparing the public and private results. For the variables **urbanicity**, **new teacher**, and **school sampled in 1990-91 SASS**, the results of the public and private significance tests differ greatly. **Urbanicity** was significant for all of the public school components, except the student record component, while it was significant for only one of the private school components, teacher. The variable **new teacher** was only significant for the Public School Teacher Component, not for the Private School Teacher Component.

The most striking contrast in results exists for the variable **school sampled in 1990-91 SASS**. Whether or not a school was surveyed in the 1990-91 SASS proved not to be significant for any of the public school components, while it was significant for all of the private school components.

[63] Private School Survey (PSS).

Some interesting patterns arise when response rates are looked at across surveys. Tables 4.3 and 4.4 show the rankings of response rates for the different levels of a set of variables common across all surveys (excluding the TDS component).

For public components the response rates for **minority enrollment** and **urbanicity** show some very strong patterns. Schools with a minority enrollment greater than 50.5 percent had the lowest response rates for all public components except the Student Record Component. Further **minority enrollment** showed a significant association with response for all public components except the Student Record Component. **Urbanicity** showed a very strong pattern, with rural/small towns having the highest response rate, followed by urban fringe/large towns, and then central cities with the lowest response rates. This pattern was the same for all components except the Student Record Component. But, as with **minority enrollment**, **urbanicity** showed a significant association with response for all public components except the Student Record Component (Table 4.3).

For private components the response rates for **region** and **school size** show some patterns. The Midwest region had the highest response rates for all private components except the Student Record Component. Response rates for schools with 1 to 149 students were the lowest for all private components except the Student Record Component. Similar to the public side, **region** and **school size** showed a significant association with response for all private components except the Student Record Component (Table 4.4).

The rankings, when viewed across the public and private components, show two similarities for **school level** and **urbanicity**. For **school level**, 9 of the 12 public and private components have secondary schools with the highest response rate followed by elementary, and then combined schools. **Urbanicity** also showed a fairly strong ranking pattern, where 8 of the 12 public and private components have rural/small towns with the highest response rate followed by urban fringe/large towns, and then central cities.

Table 4.3 -- Public component response rate ranks: Schools and Staffing Survey 1993-94, Public Administrator, School, Teacher, Library, Librarian, and Student Components.

Component	Administrator	School	Teacher	Library	Librarian	Student
Variable						
Minority enrollment	S	S	S	S	S	NS
Less than 5.5%	1	1	1	2	3	1
5.5 - 20.5%	2	2	2	1	1	4
20.5 - 50.5%	3	3	3	3	2	2
Greater than 50.5%	4	4	4	4	4	3
Region	S	S	S	NS	NS	S
Midwest	1	1	1	2	2	1
Northeast	3	4	4	3	1	3
South	2	2	2	1	3	2
West	4	3	3	4	4	4
School level	NS	S	NS	S	S	NS
Elementary	3	2	2	2	2	2
Secondary	2	1	1	1	1	3
Combined	1	3	3	3	3	1
School size	S	S	S	S	NS	NS
1 to 149	1	1	1	4	4	1
150 to 499	2	2	2	3	2	3
500 to 749	3	3	3	1	3	2
750 or more	4	4	4	2	1	4
Urbanicity	S	S	S	S	S	NS
Rural/small town	1	1	1	1	1	2
Urban fringe/large town	2	2	2	2	2	3
Central city	3	3	3	3	3	1

"S" indicates that the variable had a significant association with response rates.
"NS" indicates that the variable did not have a significant association with response rates.

NOTE: The response rates for the categories of a variable are ranked from highest to lowest where "1" indicates the category with the highest response rate and either "3" (for a variable with 3 categories) or a "4" (for a variable with four categories) indicates the category with the lowest response rate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Administrator, School, Teacher, Library, Librarian, and Student Questionnaires).

Table 4.4 -- Private component response rate ranks: Schools and Staffing Survey 1993-94, Private Administrator, School, Teacher, Library, Librarian, and Student Components.

Component	Administrator	School	Teacher	Library	Librarian	Student
Variable						
Region	S	S	S	S	S	NS
Midwest	1	1	1	1	1	2
Northeast	3	3	3	4	4	3
South	4	2	2	2	3	4
West	2	4	4	3	2	1
School level	S	S	S	S	S	NS
Elementary	2	1*	2	2	2	1
Secondary	1	1*	1	1	1	2
Combined	3	3	3	3	3	3
School size	S	S	S	S	S	NS
1 to 149	4	4	4	4	4	3
150 to 499	3	1	2	3	3	2
500 to 749	2	3	1	2	1	4
750 or more	1	2	3	1	2	1
Urbanicity	NS	NS	S	S	NS	NS
Rural/small town	3	1	1	1	3	2
Urban fringe/large town	2	2	2	2	2	3
Central city	1	3	3	3	1	1

"S" indicates that the variable had a significant association with response rates.
"NS" indicates that the variable did not have a significant association with response rates.

* Response rates tied at 86.95 percent.

NOTE: The response rates for the categories of a variable are ranked from highest to lowest where "1" indicates the category with the highest response rate and either "3" (for a variable with 3 categories) or a "4" (for a variable with four categories) indicates the category with the lowest response rate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private Administrator, School, Teacher, Library, Librarian, and Student Questionnaires).

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Chapter 5

Hierarchical and Cross-Classified Testing

5.1 Introduction

This chapter examines the hierarchical nature of the nonresponse in the 1993-94 SASS. The aim is to find out about the *jointness* of nonresponse; for example, to learn whether administrators in responding schools are more or less likely to respond than administrators in nonresponding schools. Specifically, the response rate is tested to see if it is independent across the following components: (1) public and private school administrators, (2) public and private schools, (3) public and private school teachers, (4) public and private school libraries, (5) public and private school librarians, and (6) local education agencies (LEAs) when "linked" with the response status of other SASS components.

5.2 Test Results by Survey Component

Independence tests identical to those performed in Chapters 2 and 3 using a modified Pearson chi-squared statistic called Rao-Scott3 were performed (see Appendix B for a detailed description of the test and the test statistic). Results of these tests are described component by component below.

5.2.1 Public Components

This section describes the details of the test results for each of the public components. Each component's test results are presented in a table that indicates the response rate of that component "linked" to the response status of other survey components, and the corresponding standard error and sample size. For instance, in Table 5.2.1, the response rate for public schools administrators in responding LEAs is 96.81 percent with a standard error of 0.228 and a sample size of 8,636. When comparing the response rates for a component and the response status of a linked component, the value of the chi-squared like test statistic (Rao-Scott3) and its corresponding P-value is given (bolded when significant). For example, in Table 5.2.1, when comparing the public school administrator response rates among responding versus nonresponding LEAs, the value of the test statistic is 3.1776 with a p-value of 0.0747 which is not significant at the 0.05 level. Thus, in this example, the response rate of public school administrators is independent of the response status of the LEAs.

Public School Administrator Component

Table 5.2.1 indicates that the response rate for public school administrators (98 percent) is significantly higher when the "linked" schools respond versus when the "linked" schools do not respond (77 percent).

Table 5.2.1 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Public School Administrator Component.

(Response rates and standard errors in percent)

Variable	Public administrator response rate	Standard error	Sample size
LEA* response status			
Responding LEAs	96.81	0.228	8,636
Nonresponding LEAs	94.44	1.323	703
Rao-Scott3 statistic: 3.1776 P-value: 0.0747			
School response status			
Responding schools	98.19	0.184	8,673
Nonresponding schools	77.46	2.086	742
Rao-Scott3 statistic: 74.6190 P-value: **0.0000**			

*Local Education Agency (LEA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Questionnaires).

Public School Component

Table 5.2.2 indicates that the response rate is significantly higher in public schools when "linked" LEAs respond (93 percent) versus when the "linked" LEAs did not respond (87 percent). Similarly, the response rate is significantly higher in public schools when "linked" administrators respond (94 percent) versus when the "linked" administrators do not respond (49 percent).

Table 5.2.2 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Public School Component.

(Response rates and standard errors in percent)

Variable	Public school response rate	Standard error	Sample size
LEA* response status			
Responding LEAs	92.69	0.327	8,734
Nonresponding LEAs	87.34	1.523	719
Rao-Scott3 statistic: 11.4172	P-value: **0.0007**		
Administrator response status			
Responding administrators	93.85	0.268	9,098
Nonresponding administrators	49.20	3.900	317
Rao-Scott3 statistic: 74.6190	P-value: **0.0000**		

*Local Education Agency (LEA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

Public School Teacher Component

Table 5.2.3 indicates that the response rate for public school teachers is significantly higher when the "linked" public school administrators respond (88 percent) versus when the "linked" public school administrators did not respond (81 percent). Also, the response rate for public school teachers is significantly higher when the "linked" public schools respond (89 percent) versus when the "linked" public schools do not respond (84 percent).

Table 5.2.3 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Public School Teacher Component.

(Response rates and standard errors in percent)

Variable	Public teacher response rate	Standard error	Sample size
LEA* response status			
Responding LEAs	88.28	0.269	49,012
Nonresponding LEAs	87.18	0.847	3,628
Rao-Scott3 statistic: 1.5755 P-value: 0.2094			
Administrator response status			
Responding administrators	88.43	0.245	51,279
Nonresponding administrators	80.81	1.936	1,364
Rao-Scott3 statistic: 14.9168 P-value: **0.0001**			
School response status			
Responding schools	88.54	0.245	49,372
Nonresponding schools	84.30	1.545	3,631
Rao-Scott3 statistic: 6.4695 P-value: **0.0110**			

*Local Education Agency (LEA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

Public School Library Component

Table 5.2.4 indicates that there is a significant difference in public school library response rates depending on

1. whether the "linked" LEA responds (91 percent) or not (79 percent);
2. whether the "linked" school administrator responds (91 percent) or not (62 percent);
3. whether the "linked" librarian responds (95 percent) or not (57 percent); or
4. whether the "linked" school responds (91 percent) or not (78 percent).

Table 5.2.4 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Public School Library Component.

(Response rates and standard errors in percent)

Variable	Public library response rate	Standard error	Sample size
LEA* response status			
Responding LEAs	91.01	0.666	4,305
Nonresponding LEAS	79.15	3.211	319
Rao-Scott3 statistic: 11.7649	P-value: **0.0006**		
Administrator response status			
Responding administrators	91.19	0.634	4,471
Nonresponding administrators	62.17	6.036	151
Rao-Scott3 statistic: 15.3927	P-value: **0.0001**		
Librarian response status			
Responding librarians	95.47	0.485	3,903
Nonresponding librarians	57.30	4.352	272
Rao-Scott3 statistic: 59.7146	P-value: **0.0000**		
School response status			
Responding schools	91.03	0.672	4,293
Nonresponding schools	78.22	2.604	362
Rao-Scott3 statistic: 21.0677	P-value: **0.0000**		

*Local Education Agency (LEA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Library Questionnaires).

Public School Librarian Component

Table 5.2.5 indicates that there is a significant difference in public school librarian response rates depending on

1. whether the "linked" LEA responds (93 percent) or not (88 percent);
2. whether the "linked" school administrator responds (93 percent) or not (70 percent);
3. whether the "linked" school library responds (95 percent) or not (56 percent); or
4. whether the "linked" school responds (93 percent) or not (83 percent).

Table 5.2.5 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Public School Librarian Component.

(Response rates and standard errors in percent)

Variable	Public librarian response rate	Standard error	Sample size
LEA* response status			
Responding LEAs	92.66	0.717	3,850
Nonresponding LEAs	88.24	1.845	297
Rao-Scott3 statistic: 4.6939	P-value: **0.0303**		
Administrator response status			
Responding administrators	93.18	0.609	3,780
Nonresponding administrators	70.40	5.761	141
Rao-Scott3 statistic: 11.4170	P-value: **0.0007**		
Library response status			
Responding librarians	95.23	0.594	3,885
Nonresponding librarians	55.98	4.037	290
Rao-Scott3 statistic: 59.7146	P-value: **0.0000**		
School response status			
Responding schools	93.08	0.683	3,833
Nonresponding schools	83.16	2.421	342
Rao-Scott3 statistic: 13.6794	P-value: **0.0002**		

*Local Education Agency (LEA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Librarian Questionnaires).

Public School Student Records Component

Table 5.2.6 indicates that the response rate for public school student records components is significantly lower when the "linked" LEAs respond (91 percent) versus when the "linked" LEAs do not respond (98 percent).

Table 5.2.6 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Public School Student Record Component.

(Response rates and standard errors in percent)

Variable	Public student records response rate	Standard error	Sample size
LEA* response status			
Responding LEAs	90.92	1.363	5,165
Nonresponding LEAs	97.62	1.812	345
Rao-Scott3 statistic: 6.4463	P-value: **0.0111**		
Administrator response status			
Responding administrators	92.06	1.386	5,389
Nonresponding administrators	68.43	21.277	121
Rao-Scott3 statistic: 1.2010	P-value: 0.2731		
School response status			
Responding schools	92.23	1.385	5,243
Nonresponding schools	80.52	9.949	334
Rao-Scott3 statistic: 1.3425	P-value: 0.2466		

*Local Education Agency (LEA)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires).

5.2.2 Private Components

This section describes the details of the test results for each of the private components. Each component's test results are presented in a table that indicates the response rate of that component "linked" to the response status of other survey components, and the corresponding standard error and sample size. Independence test results are also provided as described earlier.

Private School Administrator Component

Table 5.2.7 indicates that responding private school administrators have a significantly higher rate of response (95 percent) when the "linked" school responds versus when the school does not respond (52 percent).

Table 5.2.7 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Private School Administrator Component.

(Response rates and standard errors in percent)

Variable	Private administrator response rate	Standard error	Sample size
School response status			
Responding schools	94.97	0.529	2,555
Nonresponding schools	51.61	2.457	483

Rao-Scott3 statistic: 166.1358 P-value: **0.0000**

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Administrator Questionnaires).

Private School Component

Table 5.2.8 indicates that responding private schools have a significantly higher rate of response (90 percent) when "linked" private school administrators responds versus when "linked" private school administrators do not respond (33 percent).

Table 5.2.8 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Private School Component.

(Response rates and standard errors in percent)

Variable	Private school response rate	Standard error	Sample size
Administrator response status			
Responding administrators	90.03	0.605	2,743
Nonresponding administrators	33.97	3.222	295

Rao-Scott3 statistic: 166.1358 P-value: **0.0000**

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Questionnaires).

Private School Teacher Component

Table 5.2.9 indicates that responding private school teachers have a significantly higher rate of response (82 percent) when the "linked" private school administrator responds than when the "linked" private school administrator does not respond (54 percent). Similarly, the responding private school teachers have a significantly higher response rate (83 percent) when the "linked" school responds versus when the "linked" school does not respond (64 percent).

Table 5.2.9 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Private School Teacher Component.

(Response rates and standard errors in percent)

Variable	Private teacher response rate	Standard error	Sample size
Administrator response status			
Responding administrators	82.20	0.526	9,677
Nonresponding administrators	54.14	2.901	631
Rao-Scott3 statistic: 45.7831	P-value: **0.0000**		
School response status			
Responding schools	82.64	0.550	9,122
Nonresponding schools	63.68	2.020	1,264
Rao-Scott3 statistic: 70.7856	P-value: **0.0000**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Teacher Questionnaires).

Private School Library Component

Table 5.2.10 indicates that responding private school libraries have a significantly higher rate of response (76 percent) when "linked" private school administrators respond than when "linked" private school administrators do not respond (38 percent). In addition, the responding private school libraries have a significantly higher response rate (92 percent) when the "linked" librarian responds versus when the "linked" librarian does not respond (36 percent). Similarly, the responding private school libraries have a significantly higher response rate (73 percent) when the "linked" private schools respond versus when the "linked" private schools do not respond (55 percent).

Table 5.2.10 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Private School Library Component.

(Response rates and standard errors in percent)

Variable	Private library response rate	Standard error	Sample size
Administrator response status			
Respondent	76.18	1.435	1,856
Nonrespondent	37.72	3.507	194
Rao-Scott3 statistic: 73.2829 P-value: **0.0000**			
Librarian response status			
Respondent	92.02	1.118	1,138
Nonrespondent	35.71	3.341	218
Rao-Scott3 statistic: 110.9905 P-value: **0.0000**			
School response status			
Respondent	73.43	1.348	1,761
Nonrespondent	55.19	3.424	306
Rao-Scott3 statistic: 26.0453 P-value: **0.0000**			

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

Private School Librarian Component

Table 5.2.11 indicates that responding private school librarians have a significantly higher rate of response (84 percent) when "linked" private school administrators respond than when "linked" private school administrators do not respond (37 percent). In addition, the responding private school librarians have a significantly higher response rate (89 percent) when the "linked" library responds versus when the "linked" library does not respond (29 percent). Similarly, the responding private school librarians have a significantly higher response rate (82 percent) when the "linked" private schools respond versus when the "linked" private schools do not respond (50 percent).

Table 5.2.11 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Private School Librarian Component.

(Response rates and standard errors in percent)

Variable	Private librarian response rate	Standard error	Sample size
Administrator response status			
Responding administrators	84.47	1.679	1,205
Nonresponding administrators	37.19	3.534	145
Rao-Scott3 statistic: 85.9656	P-value: **0.0000**		
Library response status			
Responding libraries	89.35	1.065	1,159
Nonresponding libraries	28.79	3.941	197
Rao-Scott3 statistic: 110.9905	P-value: **0.0000**		
School response status			
Responding schools	82.24	1.761	1,130
Nonresponding schools	49.74	3.932	226
Rao-Scott3 statistic: 49.5489	P-value: **0.0000**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

Private School Student Record Component

Table 5.2.12 indicates that the responding private school student record component has a significantly higher response rate (91 percent) when the "linked" private schools respond versus when the "linked" private schools do not respond (64 percent).

Table 5.2.12 -- Hierarchical significance test results: Schools and Staffing Survey 1993-94, Private School Student Record Component.

(Response rates and standard errors in percent)

Variable	Private student records response rate	Standard error	Sample size
Administrator response status			
Responding administrators	88.98	2.237	1,304
Nonresponding administrators	63.97	18.444	63
Rao-Scott3 statistic: 3.3912	P-value: 0.0655		
School response status			
Responding schools	90.51	2.079	1,251
Nonresponding schools	63.67	14.830	120
Rao-Scott3 statistic: 4.3912	P-value: **0.0361**		

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires).

5.3 Summary of Test Results Across Components

The results presented in section 5.2 indicate that **all** the reporting units in the 1993-94 SASS (except the public student records component response rates compared to the "linked" LEA response status) **have higher response rates when "linked" units respond** compared to when "linked" units do not respond, and in a large number of cases the difference in response is significant. Table 5.3.1 summarizes the significance results of the independence tests conducted across all the components. In reading the table the header column identifies the survey component for which response rates were examined and the far left column indicates the "linked" response status variable whose association with the component response rates is tested. For example, under the public school administrator component the public school response status is significant, indicating that public school administrator response rates are significantly different (higher) for "linked" responding schools versus "linked" nonresponding schools.

Table 5.3.1 -- Public and private component hierarchical response rate comparisons: Schools and Staffing Survey 1993-94, All components except the Public Teacher Demand and Shortage Component.

Component	Administrator	School	Teacher	Library	Librarian	Student
Public components						
Variable						
LEA* Response Status	NS	S	NS	S	S	S
Administrator Response Status	--	S	S	S	S	NS
School Response Status	S	--	S	S	S	NS
Library Response Status	--	--	--	--	S	--
Librarian Response Status	--	--	--	S	--	--
Private components						
Variable						
Administrator Response Status	--	S	S	S	S	NS
School Response Status	S	--	S	S	S	S
Library Response Status	--	--	--	--	S	--
Librarian Response Status	--	--	--	S	--	--

*Local Education Agency (LEA)
"S" indicates that the variable had a significant association with response rates.
"NS" indicates that the variable did not have a significant association with response rates.
An em-dash (--) indicates not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (All Questionnaires).

Chapter 6

Measurement of the Sampling Frame and Cooperation Rates

6.1 Introduction

A sampling frame is the specification of all units believed to be part of a population to be studied (e.g., all public schools for the SASS Public School Survey). In order for a sampling frame to be effective it must 1) be able to identify the population, 2) provide a means for establishing contact with members of the population, and 3) be maintained in a way that a sample can be selected.

The quality of the sampling frame is important because it affects the achieved sample size and the response rates. For example, an out-of-date sampling frame could have a high number of out-of-scope population members or population members may not have up to date contact information, such as an address or a phone number.

The remainder of this chapter will discuss these issues as they pertain to the 1993-94 SASS. Section 6.2 will present out-of-scope rates for each of the SASS components, and Section 6.3 will present the components of nonresponse such as refusal rates, unable to contact rates, etc. Sections 6.4 and 6.5 give some insight into how the ability to contact the sampled units could affect response rates and their interpretation.

6.2 Out-of-Scope Rates

In the 1993-94 SASS, the 1991-92 Common Core of Data (CCD) was used as a sampling frame for public schools. The 1991-92 Private School Survey (PSS), updated with 1992-93 association lists, was used as a sampling frame for private schools. Table 6.2.1 lists the definitions of out-of-scope cases for the components of the 1993-94 SASS.

Table 6.2.1 -- Definition of out-of-scope units in the 1993-94 Schools and Staffing Survey.

Unit	Out-of-scope definition
Local Education Agency (LEA)	An LEA was considered out-of-scope for the TDS Survey if it did not employ elementary or secondary teachers of any kind, including special education teachers and itinerant teachers.
Public School	A public CCD school was considered out-of-scope for SASS if did not have any students in any grades 1-12 or equivalent ungraded. Schools offering only kindergarten and pre-kindergarten were deleted from the sampling frame before the sample was selected. If a school was determined to be out-of-from the data file.
Private School	A private school was considered out-of-scope for SASS if it did not have any students in any grades 1-12, if it operated in a private home that was used as a family residence, or if it was undetermined whether it operated in a private home and its size was very small (enrollment less than 10 or only one teacher). Out-of-scope schools were deleted from the sampling frame before the sample was selected. If a school was determined to be out-of-scope after editing its questionnaire, it was deleted from the data file.
School Administrator	A school administrator sample case was considered out-of-scope if the school did not have an administrator. Also, if a sample administrator's school was considered out-of-scope, the administrator was automatically classified as out-of-scope.
Teacher	A sample teacher was considered out-of-scope if he/she was a short-term substitute, a student teacher, a nonteaching specialist (e.g., guidance counselor, librarian, nurse, psychologist), an administrator (e.g., principal, assistant principal), a teacher's aide, or in some other professional or support staff position (cooks, custodian, bus driver, dietitian, secretary). If a sample school was out-of-scope, all teachers from that school were also considered out-of-scope.
Library	A library media center sample case was considered out-of-scope if the school did not have a library. Also, if the sample library's school was considered out-of-scope, the library was also classified as out-of-scope.
Librarian	A library media specialist sample case was considered out-of-scope if the school's library did not have a librarian or if the librarian was not a staff member whose primary assignment was to perform the duties of a library media specialist. This excluded teachers, volunteers, and other staff members.
Student Record	A student was considered out-of-scope if he/she dropped out, transferred to another school, withdrew, was expelled, was chronically truant, or died.

SOURCE: Abramson et al. (1996), *1993-94 Schools and Staffing Survey: Sample Design and Evaluation*, NCES 96-089.

Table 6.2.2 provides the number and percentage of units identified as out-of-scope units after the sample selection for each component. All of the public components have lower out-of-scope rates than their private counterparts. Also school level components (Public School, Public School Administrator, Private School, Private School Administrator) have lower out-of-scope rates than their lower level components (Public School Teacher, Private School Teacher, Public Library, Private Library, Public School Librarian, Private School Librarian). The Public School Student Record component has the lowest rate (2.3 percent) and Private School Librarian has the highest rate (46.5 percent).

The Private School Librarian has a very high out-of-scope rate because the librarian of a school was considered out-of-scope if the school's library did not have a librarian or if the librarian was not a staff member whose primary assignment was to perform the duties of a librarian. The out-of-scope rate of Private School Librarians was almost three times higher than the out-of-scope rate for Private School Libraries. This indicates that private schools do have libraries but that they are either not staffed or staffed by people who are considered out-of-scope.

Table 6.2.2 -- Out-of-scope sampled units as a percentage of the total sample: Schools and Staffing Survey, 1993-94.

Component	Sample size	Number out-of-scope	Percent out-of-scope
TDS*	5,568	205	3.7
Public School	9,825	293	3.0
Private School	3,353	279	8.3
Public School Administrator	9,825	410	4.2
Private School Administrator	3,353	315	9.4
Public School Teacher	55,996	2993	5.3
Private School Teacher	11,530	1144	9.9
Public School Library	5,026	371	7.4
Private School Library	2,536	469	18.5
Public School Librarian	5,026	851	16.9
Private School Librarian	2,536	1180	46.5
Public School Student Record	5,709	132	2.3
Private School Student Record	1,432	61	4.3

* Teacher Demand and Shortage (TDS).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (All Questionnaires).

6.3 Reasons for Nonresponse

To measure the ability of a survey to establish contact with sampled units, the reasons for nonresponse are important In the 1993-94 SASS, three categories of reasons were recorded: 1) **refusal**, the nonrespondent refuses to take part in the survey; 2)**unable-to-contact**, contact with the nonrespondent was not able to be made through the nonresponse follow-up procedures; and 3)**other**, for example the questionnaire was not returned[64] or the questionnaire was returned but it was incomplete.

Table 6.3.1 presents the reasons for nonresponse as a percentage of the sample size, while Table 6.3.2 presents the reasons as a percentage of nonrespondents. For example, in Table 6.3.1, of the 9,532 schools in the public school component, 3.4 percent refused to respond, contact could not be made with 0.02 percent, and 4.6 percent of the nonrespondents fell into the other category. Likewise, Table 6.3.2 shows that of the 765 schools that did not respond in the public school component, 42.4 percent refused to participate, 0.3 percent were not able to be contacted, and 57.4 percent did not respond because the questionnaire was not returned or was not complete.

All components except the two teacher components have very low unable-to-contact rates. A reason for the higher unable-to-contact rates in the teacher component could be a result of how teachers are sampled. For the teacher component the sampled schools were asked to provide teacher lists which were used to select the sample of teachers. If, after selection, a teacher did not respond then contact was made with the teacher based on the information on the teacher list supplied by the school. The teacher information supplied by the school rarely is an impediment to contacting the teacher for nonresponse follow-up. Teacher classroom schedules and access to a telephone present the most formidable barriers when attempting to contact teachers. The other components, which have less complex procedures for developing a sampling frame, have much lower unable-to-contact rates than the teacher component.

[64] The questionnaire was considered not returned when1) the sample case was contacted, 2) the sample case said they would complete the survey, and 3) the sample case did not return the survey.

Table 6.3.1 -- Reasons for nonresponse expressed as a percentage of total sample size: Schools and Staffing Survey 1993-94.

Component	Sample size	Percent nonrespondents	Percent refusal	Percent unable-to-contact	Percent other*
TDS**	5,363	6.9	4.5	0.0	2.4
Public School	9,532	8.0	3.4	0.0	4.6
Private School	3,074	15.9	12.5	0.6	2.8
Public Sch. Administrator	9,415	3.4	2.7	0.1	0.6
Private Sch. Administrator	3,038	9.7	7.9	0.1	1.7
Public School Teacher	53,003	11.1	5.8	2.0	3.4
Private School Teacher	10,386	19.4	11.4	3.5	4.5
Public School Library***	4,655	8.9	3.7	0.2	2.0
Private School Library***	2,067	22.3	7.8	0.4	3.4
Public School Librarian	4,175	6.5	3.0	0.2	3.3
Private School Librarian	1,356	16.1	8.4	0.7	6.9
Public Sch. Student Record	5,577	9.8	4.6	0.6	4.6
Private Sch. Student Record	1,371	12.4	7.7	0.4	4.3

* Other (Insufficient data, questionnaire not returned, etc.).
** Teacher Demand and Shortage (TDS).
*** Not all nonrespondents were assigned a reason for nonresponse, so these entries do not add up to the total.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (All Questionnaires).

Table 6.3.2 -- Reasons for nonresponse expressed as a percentage of nonrespondents: Schools and Staffing Survey 1993-94.

Component	Number of nonrespondents	Percent refusal	Percent unable-to-contact	Percent other*
TDS**	370	65.7	0.0	34.3
Public School	765	42.4	0.3	57.4
Private School	489	78.7	3.7	17.6
Public School Administrator	317	79.2	2.2	18.6
Private School Administrator	295	81.0	1.4	17.6
Public School Teacher	5898	51.8	17.9	30.3
Private School Teacher	2014	58.9	17.9	23.2
Public School Library	272	62.9	3.7	33.5
Private School Library	240	67.1	3.8	29.2
Public School Librarian	272	45.6	3.3	51.1
Private School Librarian	218	52.3	4.6	43.1
Public School Student Record	545	46.8	6.4	46.8
Private School Student Record	170	61.8	3.5	34.7

* Other (Insufficient data, questionnaire not returned, etc.).
** Teacher Demand and Shortage (TDS).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (All Questionnaires).

6.4 Cooperation Rate

All the components, except the two teacher components, have very low unable-to-contact rates. These low rates show that the information on the sampling frame is current and up to date, or put another way, the portion of nonresponse due to sampling frame deficiencies is small. So for these components response rates would not change much if the unable-to-contact units were excluded from the calculation of response rates. For the two teacher surveys, about 17.9 percent of nonrespondents were unable-to-contact units, so they did not even have a chance to respond to the survey. For those instances with high unable-to-contact rates, it is sensible to look at a **cooperation rate**, which is the response rate given the cases that can be contacted. The cooperation rate is the number of interviews divided by the number of eligible cases contacted

$$\text{Cooperation Rate} = \frac{\text{Interview}}{\text{Interview} + \text{Refusal} + \text{Other}}.$$

Compare this with the response rate used in the previous chapters

$$\text{Response rate} = \frac{\text{Interview}}{\text{Interview} + \text{Refusal} + \text{Unable-to-contact} + \text{Other}}.$$

Tables 6.4.1 gives weighted cooperation and response rates for all SASS components. The difference between these two response rates is greater than one percent for only three of the components, the public and private teacher and private librarian components.

Table 6.4.1 -- Weighted cooperation and response rates: Schools and Staffing Survey 1993-94.

(Response rates in percent)

Component	Cooperation rate*	Response rate**
TDS***	93.90	93.90
Public School	92.28	92.27
Private School	83.67	83.19
Public School Administrator	96.68	96.60
Private School Administrator	87.80	87.62
Public School Teacher	89.92	88.22
Private School Teacher	83.08	80.18
Public School Library	90.40	90.07
Private School Library	71.65	70.70
Public School Librarian	92.52	92.30
Private School Librarian	78.30	76.50
Public School Student Record	91.79	91.31
Private School Student Record	88.92	88.05

* The cooperation rate is the number of interviews divided by the number of eligible cases contacted.
** The response rate is the number of interviews divided by the number of in-scope-cases.
*** Teacher Demand and Shortage (TDS).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (All Questionnaires).

6.5 Differences in Respondents versus Nonrespondents After Removal of Unable-To-Contacts

This section examines how using the cooperation rate, instead of the response rate, affects the significance tests carried out in this report. This examination will only be done for the public and private teacher components since their unable-to-contact rates are the highest of all the components and the difference between their response and cooperation rates were among the highest.

The advantage of using the cooperation rate is that it controls for differences due to the unable-to-contact cases. Using the cooperation rate will eliminate the confounding effect associated with unable-to-contact cases. To illustrate this confounding effect, the significance tests for the teacher components (Section 2.4) were redone, this time excluding the unable-to-contact cases. The results did not change much: Tables 6.5.1 to 6.5.4 present results for the one variable in the Public School Teacher Component and the two variables in the Private School Teacher Component which are opposite to those in section 2.4 (i.e., the result changed from significant in section 2.4 to non-significant here, or vice versa).

For the public teacher component, after the unable-to-contact cases were removed the variable school type was not significant as it is in section 2.4 (Table 6.5.1). The reason for this is that the low response rates for the non-regular schools is due to a higher unable-to-contact rate than regular schools.

Table 6.5.1 -- Rao-Scott3 P-value: Schools and Staffing Survey 1993-94, Public School Teacher Component.

Variable	RS3* P-value based on response rate	RS3 P-value based on cooperation rate
School type	0.0172	0.1092

* Rao-Scott3 (RS3).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Teacher Questionnaires).

Table 6.5.2 -- Weighted response and cooperation rates: Schools and Staffing Survey 1993-94, Public School Teacher Component.

(Rates in percent)

Variable	Cooperation rate	Response rate
School type		
Regular	89.95	88.26
Non-regular	88.42	86.25

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 Public School Teacher Questionnaires).

For the private school component, the lower response rate in central cities is due to a high unable-to-contact rate. After adjusting for this, by removing the unable-to-contact cases, urbanicity is not significant (Tables 6.5.3 and 6.5.4). On the another hand, there is a high unable-to-contact rate for new teachers and that caused a low response rate for the new teachers. After the unable-to-contact cases are removed, the new teachers have a significantly higher cooperation rate than the others and the variable new teacher becomes significant (Tables 6.5.2 and 6.5.3).

Table 6.5.3 -- Rao-Scott3 P-value: Schools and Staffing Survey 1993-94, Private School Teacher Component.

Variable	RS3* P-value based on response rate	RS3 P-value based on cooperation rate
Urbanicity	0.0094	0.0923
New teacher	0.3206	0.0107

* Rao-Scott3 (RS3).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Teacher Questionnaires).

Table 6.5.4 -- Weighted response and cooperation rates: Schools and Staffing Survey 1993-94, Private School Teacher Component.

(Rates in percent)

Variable	Cooperation rate	Response rate
Urbanicity		
Rural/small town	85.38	83.10
Urban fringe/large town	82.48	80.41
Central city	82.64	78.79
New teacher		
Yes	85.16	81.02
No	82.76	80.05

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Teacher Questionnaires).

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Chapter 7

Nonresponse Modeling for the Public School Component

7.1 Introduction

In the previous chapters, variables for each component which may potentially affect response rates were identified, and the univariate analysis results which test the effect for each selected factor separately were also presented. To some extent, the response rates presented in the chapters 2 and 3 give a measure of the magnitude of the effect for each factor separately, but they are unadjusted for other factors. The chi-squared like two-way Rao-Scott tests (see Appendix B) implemented by WesVarPC® 2.0 only tell if a variable has an unadjusted effect on the response rates, which may actually be caused by other factors. This will be seen later on.

In this chapter, a multivariate logistic regression model for the Public School Component is fit. It not only answers which factor(s) have a real significant effect, but also tells the nature and strength of the association between the response rates and the independent factors, and the relative importance of the selected independent factors. The odds ratio will also be presented to show the relative probability for one type of school to respond to the survey versus another.

Section 7.2 describes the model selection procedure. Section 7.3 gives the results of the multivariate analysis and compares them with the univariate analysis results, and section 7.4 offers a further discussion. This was done only for the public school component; the multivariate analyses for other components are parallel.

7.2 Model Selection

The independent variables are selected according to their intuitive meaning and their relative contribution to the model. That is, a variable will be out of the model if it has interpretation problems or it has an ignorable contribution to the model. The following potential variables are considered in the univariate analysis: **urbanicity**, **region**, **school level**, **school size**, **school type**, **minority enrollment**, **sampled with certainty**, **submitted a teacher list**, **source**, and **sampled in the 1990-91 SASS**.

Since WesVarPC® 2.0 is not capable of doing model selection (backward elimination, forward selection, or stepwise), nor able to fit a logistic regression model with more than seven independent variables, SAS is used for preliminary model selection. Actually, when seven variables are put in the model, which WesVarPC® is able to handle, SAS and WesVarPC® give similar results about the relative importance of the independent factors. Therefore, the variables selected by SAS should be reasonable to be used in the WesVarPC® logistic regression model, which unlike SAS adjusts for design effect.

In the preliminary model selection, the variable **submitted a teacher list** is picked as the most significant variable and contributes much more to the SAS logistic regression model than any other

variable. The relationship says that a school which is not willing to provide a teacher list will be much more likely not to respond to the survey, as shown in the univariate analysis. This may be useful information for improving the school response rate if the status of this variable is monitored early enough in the data collection process.

However, the final multivariate model discussed in this chapter will not include this variable due to the following reasons. This variable is not a design variable, but a data collection variable. The school survey design has been done before any datum on this variable is collected. But the main purpose of this nonresponse analysis is to identify important design variables related to school nonresponse so that the analysis results can be used at the planning phase for the next round of SASS survey. More importantly, introducing this variable into the multivariate model will obscure the information provided by the other (design) variables in the model, and all the design variables become insignificant. Actually, compared to those design variables, the variable **submitted a teacher list** is more like a dependent variable rather than an independent factor, and its variation itself should be explained by those design variables.

The SAS backward elimination procedure eliminated two variables: **sampled in the 1990-91 SASS** and **sampled with certainty**. Both the Rao-Scott test and WesVarPC® univariate logistic regression show that these two variables are not significant at all. The other seven variables are selected with at least one significant dummy variable (each variable is represented by one or more dummy variables) at the 0.05 level in the SAS logistic regression model. Since WesVarPC® is still unable to fit the model with these seven variables, the two variables **minority enrollment** and **source** are coded into fewer categories. **Minority enrollment** was recoded into three categories: 1) minority enrollment less than 5.5 percent, 2) minority enrollment between 5.5 and 20.5 percent, and 3) minority enrollment over 20.5 percent. For the same reason, three categories of **source** -- 1) 1991-92 CCD, 2) 1993-94 SPE, and 3) QED original -- are combined into one category, so **source** has two levels: 1) CCD update and 2) the others.

7.3 Final Logistic Regression Models for the Public School Components

WesVarPC® is used to fit one multivariate logistic regression model with all seven independent variables selected in section 7.2 and seven separate univariate logistic regression models for those variables. The final multivariate logistic model is

$$\log\left(\frac{p(x)}{1-p(x)}\right) = b_0 + \sum_{i=1}^{2} b_{1i} X_{1i} + \sum_{i=1}^{3} b_{2i} X_{2i} + \sum_{i=1}^{2} b_{3i} X_{2i} + b_{41} X_{41} + \sum_{i=1}^{2} b_{5i} X_{5i} + \sum_{i=1}^{3} b_{6i} X_{6i} + b_{71} X_{71},$$

where $p(x) = \Pr(Y = 1|x)$ is the conditional probability that the school responds to the survey. In this model parameterization, the x's are "dummy" variables, taking on the value of 1 if the characteristic is present and zero otherwise. In particular the x_{1i} (i=1, 2) are "dummy" variables coding **urbanicity**, x_{2i} (i=1, 2, 3) are "dummy" variables coding **region**, x_{3i} (i=1, 2) are "dummy" variables

coding **minority enrollment**, x_{41} is the variable coding school **source** (CCD update versus others), x_{5i} (i=1, 2) are "dummy" variables coding **school level**, x_{6i} (i=1, 2) are "dummy" variables coding **school size**, and x_{71} is the variable coding **school type** (non-regular versus regular). Standard methods of analyzing logistic models assume that the observations are from a simple random sample, but WesVarPC® takes account of the complex sample design by applying a replication method to estimate the sampling errors of the model parameters, and to provide tests of hypotheses.

Table 7.3.1 presents a comparison of the P-value for the Rao-Scott, univariate logistic regression models, and multivariate logistic regression model tests.

Table 7.3.1 -- P-values for Rao-Scott, univariate logistic regression model, and multivariate logistic regression model tests.

Variable	Rao-Scott (RS3)	Univariate model	Multivariate model
Urbanicity	0.0001	0.0001	0.1016
Region	0.0030	0.0109	0.1115
Minority enrollment	0.0002	0.0002	0.3936
Source	0.0175	0.0605	0.0746
School level	0.0100	0.0119	0.0116
School size	0.0000	0.0001	0.0001
School type	0.0719	0.0397	0.0047

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

It is noted that the Rao-Scott (RS3) and the univariate logistic regression P-values are close. The only significant difference between these two tests is for variables **source** and **school type**, but their P-values are still comparable. If the hypotheses are tested at the 0.01 level, both tests will reach the same conclusion of significance.

However, the results of the multivariate logistic regression model are different from the Rao-Scott and univariate logistic regression model results, especially for the variables **minority enrollment**, **urbanicity**, **region**, and **school type**. The Rao-Scott tests and the tests of the univariate logistic regression model show that **minority enrollment**, **urbanicity**, and **region** are highly significant, but the tests of the multivariate model show that they are not significant, with P-values of 0.3936, 0.1016 and 0.1115, respectively, when other variables are adjusted for simultaneously. This

phenomenon is called the antagonism effect.[65] In this case, it makes no sense to use the univariate tests to conclude that **minority enrollment**, **urbanicity**, and **region** have significant effects on school nonresponse. This is because their significant effects are simply caused by an imbalance of other factors such as **school level**, **school size**, and **school type**, or it can be said that the information about school nonresponse provided by **minority enrollment** actually comes from other factors. Therefore, **minority enrollment** has no significant effect on school nonresponse if the other six factors are fixed. The same interpretation applies to the overall effects of **urbanicity** and **region**.

On the other hand, the variable **school type** goes in the opposite direction. In the multivariate logistic regression model, **school type** is significant (at the 0.01 level) with a P-value of 0.0047, but it is not significant in the univariate logistic regression model or by Rao-Scott test with P-values of 0.0397 and 0.0719, respectively. This phenomenon is called the synergism effect.[66] For the same reason, it makes no sense to use the univariate tests to conclude that **school type** has no significant effect on the school nonresponse at the 0.01 level. In this case, some information about school nonresponse provided by **school type** is covered by the noise of other factors. That part of the information must be retrieved by adjusting to other factors simultaneously using a multivariate regression model.

In practice, the antagonism effect happens much more often than the synergism effect. For the variables **school size**, **school level**, and **source**, it seems that there is neither an antagonism effect nor a synergism effect. The 4-level variable **school size** is the most significant variable for explaining the variation of school nonresponse.

Now for a look at the nature of the association and the strength of the association between the logit of the school response and the seven independent factors: the entropy[67] for the overall model is 2.13 percent, which is very low and means that the overall relationship between the school nonresponse and the selected predictors may be weak. But it is very common for a logistic regression model to get such a small entropy. The documentation for WesVarPC® indicates that this entropy may not be appropriate to measure the strength of the association. Actually, even for the usual logistic regression model, no satisfactory statistic has been developed to measure the strength of the association between the response variable and independent variables. No SAS procedure that fits logistic regression models (e.g., PROC LOGISTIC, PROC CATMOD, etc.) provides this type of statistic to measure the strength of the association. The entropy may be calculated for the usual logistic regression model, but it is not as satisfactory as R^2 for the usual multivariate regression model.

Table 7.3.2 presents the parameter estimators, standard errors, odds ratios, and P-values of the tests for the binary dummy variables which represent the independent variables in the multivariate logistic regression model.

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[65] An **antagonism effect** is when a factor becomes less significant in a multivariate model than it is in a univariate model, when adjusting for other factors.

[66] A **synergism effect** is when a factor becomes more significant in a multivariate model than it is in a univariate model, when adjusting for other factors.

[67] **Entropy** is equal to the difference between the log likelihoods with or without the independent variables divided by the log likelihood of the full model, and is used to measure the strength of the association for a logistic regression model.

Table 7.3.2 -- Parameter estimate, odds ratio and P-value: Schools and Staffing Survey 1993-94, Public School Component.

Pairwise comparison	Parameter estimate	Standard error	Odds ratio	P-value
Urbanicity				
Rural/small town versus Central city	0.32	0.154	1.377	0.0410
Urban fringe/large town versus Central city	0.07	0.159	1.073	0.6600
Region				
Midwest versus West	0.29	0.162	1.336	0.0844
Northeast versus West	-0.12	0.179	0.887	0.4928
South versus West	0.18	0.136	1.197	0.2019
Minority enrollment				
Less than 5.5% versus Greater than 20.5%	0.16	0.136	1.174	0.2458
5.5-20.5% versus Greater than 20.5%	0.11	0.119	1.116	0.3615
Source				
CCD update versus others	0.46	0.254	1.584	0.0746
School level				
Combined versus Secondary	-0.36	0.156	0.698	0.0268
Elementary versus Secondary	-0.23	0.089	0.795	0.0140
School size				
1 to 149 versus 750 or more	0.84	0.156	2.316	0.0000
150 to 499 versus 750 or more	0.40	0.120	1.492	0.0015
500 to 749 versus 750 or more	0.30	0.152	1.350	0.0543
School type				
Non-regular versus Regular	-0.68	0.229	0.507	0.0047

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

The parameter estimators and odds ratios describe the nature of the association between the school response status and the selected independent factors. Parameter estimators can be used to

predict the probability for a school, with given levels of the independent factors, to respond to the survey.

The response rate of a rural/small town school is barely significantly higher than a central city school, although the overall factor **urbanicity** is not significant with a P-value of 0.1016. The odds for a rural/small town school response is 1.377 times the odds for a central city school response. Also, an urban fringe/large town school is not significantly different from a central city school in terms of response rates.

School level, **school size**, and **school type** are all significant factors for school nonresponse. A combined school and an elementary school are both less likely to respond to the survey than a secondary school: the odds ratio comparing a combined school and a secondary school is 0.698, and the odds ratio comparing an elementary school and a secondary school is 0.795. A small school is more likely to respond than a large school. The odds ratio comparing a school with enrollment between 1 and 149 students and a school with an enrollment of 750 or more students is 2.316. A non-regular school is less likely to respond than a regular school. The odds ratio comparing these two types of schools is about one-half. **Minority enrollment** has no effect on the school nonresponse. The overall effect of **region** is not significant, but the test comparing the Midwest and West is close to being significant with a P-value of 0.0844. The variable **source** is also close to being significant. These two variables may become significant if all insignificant variables are eliminated from the full model and fit to a reduced model.

Table 7.3.3 presents the reduced logistic regression model which is obtained through Freedman's one-stage deletion method (Freedman, 1983) at level 0.1. Only one variable, **minority enrollment**, which is not significant at the 0.1 level in the full model, is excluded from the reduced model. Interpretation of these results should be made carefully.

The results of the reduced model for **school level**, **school size**, **school type**, and **source** are almost identical to those in the full model presented in Table 7.3.2. This indicates that little or no bias has been introduced into the model. In the reduced model, **urbanicity** is significant with a P-value of 0.0063, but this P-value is for the test to compare rural/small town schools to all other schools.[68] Similarly, the test to compare the Midwest versus the other three regions is barely significant at the 0.05 level.

To summarize, it is found that **school size**, **school level**, and **school type** are the only three factors which have a significant effect on school nonresponse. Neither the 3-level variable **urbanicity** or the 4-level variable **region** have significant overall effects, but a rural/small town school has a significantly higher probability of responding than an urban fringe/large town or a central city school, and the Midwest has significantly higher response rates than other regions. **Minority enrollment**, which is highly significant in the univariate model, is not significant at all in the multivariate model. The sample frame source "CCD update" is a little better than the other three sources (close to significant), but the other three sources are not significantly different at all.

[68] Urban and suburban schools have been combined into one category called "other schools."

Table 7.3.3 -- The reduced model with insignificant variables eliminated.

Pairwise comparison	Parameter estimate	Standard error	Odds ratio	P-value
Urbanicity				
Rural versus others	0.36	0.124	1.433	0.0063
Region				
Midwest versus others	0.28	0.122	1.323	0.0253
Source				
CCD update versus others	0.49	0.250	1.632	0.0536
School level				
Combined versus Secondary	-0.36	0.148	0.698	0.0177
Elementary versus Secondary	-0.23	0.088	0.794	0.0107
School size				
1 to 149 versus 750 or more	0.84	0.152	2.316	0.0000
150 to 499 versus 750 or more	0.40	0.116	1.492	0.0012
500 to 749 versus 750 or more	0.30	0.150	1.350	0.0509
School type				
Non-regular versus Regular	-0.71	0.222	0.492	0.0024

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

7.4 Discussion

The modeling results here for the 1993-94 SASS public school component are different from those for the 1990-91 SASS public school component. In the 1990-91 SASS the logistic regression model only considered four variables: **urbanicity**, **school level**, **school size**, and a "**state grouping**" variable. The 1990-91 analysis found that **school level** and **school size** are not significant while **urbanicity** is significant. This study found that **school size** is the most significant variable and **school level** is also significant while **urbanicity** is not significant when using the same 3-level coding as the 1990-91 SASS nonresponse analysis.

There are three possible reasons. First, the difference between the 1990-91 SASS sample and the 1993-94 sample may cause the change of significance of the independent factors. It is not uncommon to reach different conclusions on the significance of independent variables even for samples from the same population which are selected at the same time. The second possible reason is that different procedures are actually used to fit the logistic regression models. Here WesVarPC®

is used to fit the model in which replicate weights are introduced to adjust for the design effect, while in the 1990-91 SASS nonresponse analyses the test statistics are directly adjusted by the design effect after logistic regression models are fit through SAS PROC LOGISTIC. The third reason is that in the 1990-91 analysis a state grouping variable was introduced into the model. This variable is actually constructed using the response variable. It should be explained by other independent variables. The results may be misleading if such an "independent" variable is introduced to the model because it may cover up a lot of information provided by other factors.

The univariate result of each factor may not represent its real contribution to the response variable. The information provided by each factor can only be retrieved through a multivariate model by adjusting using other factors. That is why a lot of data analysis specialists like to begin with the full multivariate model to find the real significant factors and then try to explain the difference between the univariate results and multivariate results. This way may provide a better chance to include all really important variables in the model.

Chapter 8

Highlights and Recommendations

This chapter provides highlights of the findings from the analysis of unit response rates in the 1993-94 SASS. Using these findings, a set of recommendations for survey operations and methods development have been set forth.

1. **Although overall unit response rates in the core SASS components remain fairly high, they have dropped in some components between 1990-91 and 1993-94.** The results of the descriptive analysis of the 1993-94 SASS unit response rates indicate that although unit response rates for each of the core component surveys (school, administrator, teacher, and TDS) are never below 80 percent, they have dropped slightly[69] in most of the components (i.e., public and private school components, private school administrator component, public and private teacher components) since the last round of the survey conducted in 1990-91. The greatest percentage point drop occurred in the private teacher component where the response rate dropped from 84 percent in 1990-91 to 80 percent in 1993-94. This drop in response rate may be of concern because it is further compounded by a teacher list nonresponse rate of 9 percent among sampled private schools in 1993-94.

   Interestingly, although the *mail return rates* (as a percent of total response) between 1990-91 and 1993-94 for the public school component paralleled this downward trend, the private school component mail return rates increased significantly between 1990-91 (56 percent) and 1993-94 (65 percent). In contrast, the CATI/telephone *follow-up completion rates* for the private school component (67 percent) was significantly lower than for the public school component (74 percent). Table 8.1 shows a common pattern of follow-up completion rates being significantly higher for the public components versus their private counterparts.

[69]These are statistically significant differences. A difference is said to be *significant* in this chapter if it reaches the nominal 95 percent level. This will be the basic standard of comparison throughout this chapter when commenting on the response rate patterns. Bonferroni methods will be employed, as in Ahmed, S. (1992). This means that for a single 95% test of significance between two stipulated response rates a critical value of t=1.96 is used. When looking at all possible comparisons among three groups (as with urbanicity or school level), the t-value needs to be increased to t=2.39. For comparisons by school size, where there are 4 groups, the t-value grows to 2.64 (and so on).

Table 8.1 -- CATI/telephone follow-up completion rates: Schools and Staffing Survey 1993-94, Public and Private School, Administrator, Teacher, Library, and Librarian Components.

(Response rates in percent)

SASS component	Sector	
	Public	**Private**
School	74.43	67.29
Administrator	83.83	65.21
Teacher	56.04	42.09
Library	65.86	58.00
Librarian	73.32	36.47

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public and Private School, Administrator, Teacher, Library and Librarian Questionnaires).

Recommendations:

Re-evaluate the impact of changes in SASS made between 1990-91 and 1993-94. The 1993-94 SASS was the first time three new components of the survey (student records, library, and librarian) were conducted. It is conjectured that the added burden for schools selected for both the core and new components may have been one of the reasons for the slight drop in response rates across most of the core components. This conjecture could be examined by further study of the mail return rates and overall response rates of these schools. Unfortunately, the current SASS research files do not contain a variable that allows any analysis of mail return rates. It is strongly recommended that this variable be included in future SASS research files. Other sample design, questionnaire, and operational changes should also be re-evaluated through techniques such as comparison of reinterview results both prior to changes and after changes, small administrative record check studies, etc., in conjunction with our examination of response rates. For example, the teacher listing form instructions and procedures were changed, mail out procedures were modified, and telephone/CATI was used extensively for nonresponse follow-up for the first time in the 1993-94 SASS.

Also, keeping in mind that prior reinterview results and item nonresponse rates indicate that the quality of SASS mail returns exceeds that of those obtained by telephone, any re-evaluation of changes in forms and procedures should focus on understanding the reasons for improved mail return rates in the private school component yet a decrease in mail return rates in the public school component. In addition, since CATI/telephone follow-up completion rates for the private SASS components are significantly lower than the public SASS components, alternative data collection procedures should be field tested in order to "optimize" resource allocations. A split-panel study of the current method of data collection (i.e., two mailings followed by CATI or telephone follow-up by field representatives of **all** nonrespondents) versus an alternative method of data collection could indicate where the allocation of resources should be concentrated and whether slightly different allocations are optimal for public versus private schools or subgroups of these schools. An example

of an alternative data collection procedure is to include incentives in order to increase mail return rates (which produces better quality data) coupled with only selecting a **subsample** of all nonrespondents to be followed up by CATI/telephone. The subsampling rate could vary for different groups of schools, teachers, etc. Some of the information on characteristics that are significantly associated with response found during our nonresponse analyses in 1990-91 and 1993-94 could drive the follow-up subsampling rates. For example, this could be done by subsampling for follow-up at a lower rate those types of schools that have higher response rates and vice versa. Standard analytic models for answering the question of optimum allocation could then be used provided appropriate data on cost components are available.

Operational data on mail return rates by stratum and other characteristics that are available from the frame should be routinely produced for each survey. This information should be tracked and used to increase mail response rates. For example, certain areas or types of schools/LEAs/individuals with significantly lower mail return rates than the average could be targeted for special handling. Either these units could be given some sort of incentive to increase mail response or they could be targeted for telephone follow-up right away in order to complete the surveys earlier.

2. **Unit response rates for all public school components are significantly higher than their private school counterparts**. As in previous rounds of SASS, unit response rates for the core components continue to be higher in public school components compared to their corresponding private school components in 1993-94 (Table 8.2). A similar gap in response rates between public and private components occurs within the new SASS components in 1993-94. In particular, for the public and private library and librarian components, there is over a 15 percentage point difference between the response rates (Table 8.3).

Table 8.2 -- Unit response rates: Schools and Staffing Survey 1987-88, 1990-91, and 1993-94, Public and Private School, Administrator, and Teacher Components.

(Response rates in percent)

SASS component	Sector	Survey period 1987-88	1990-91	1993-94
School	Public	92	95	92
	Private	79	84	83
Administrator	Public	94	97	97
	Private	79	90	88
Teacher	Public	86	90	88
	Private	79	84	80

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88, 1990-91, and 1993-94 (Public and Private School, Administrator, and Teacher Questionnaires).

Table 8.3 -- Unit response rates: Schools and Staffing Survey 1993-94, Public and Private Library, Librarian, and Student Record Components.

(Response rates in percent)

Sector	SASS component Library	Librarian	Student Record
Public	90	92	91
Private	71	77	88

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public and Private Library, Librarian, and Student Questionnaires).

Recommendations:

Take steps to understand the reasons for the gap in response rates between public and private schools and to narrow it. An intensive follow-up study of a small sample of nonresponding private schools designed to identify any special difficulties these schools have in responding to the SASS surveys should be conducted. The study could include cognitive in-depth interviews or cognitive focus groups with administrators from a small sample of private nonresponding schools. Such a study could give insights on the degree of difficulty with survey items, the timing of the requests, the instructions and procedures, etc. A potential finding may be that only a "core" subset of the survey items should be administered instead of the full survey during the nonresponse follow-up by telephone/CATI. All suggested changes for the next round should be field tested to determine if they succeed in narrowing the gap in response rates.

Extend the outreach strategy to further increase the interest and enthusiasm in SASS by the private school community. NCES already gains endorsements for SASS from the major national private school associations and meets regularly (every 12-16 months) with private school associations. It is important to further build upon the existing base of support for SASS by the private school community. Critical to this effort would be designing and implementing activities whose aim would be both to inform the varied sectors of the private school community about SASS -- its scope and importance -- and to generate continued support and enthusiasm of major private schools associations. The current outreach strategy could be extended to include activities such as presenting information about SASS and its products at meetings of the various private school associations, the development of a promotional brochure which could be disseminated among a wide variety of associations, and national workshops.

3. Patterns of nonresponse among the core components of SASS persisted from 1990-91 to 1993-94. Some highlights follow:

- In terms of **regional characteristics of schools**, response rates in the Midwest were consistently the highest for public and private school, administrator, and teacher components in both 1990-91 and 1993-94 (Table 8.4).

Table 8.4 -- Regional response rates: Schools and Staffing Survey 1990-91 and 1993-94, Public and Private School, Administrator, and Teacher Components.

(Response rates in percent)

SASS component	Survey period	Region			
		Midwest	Northeast	South	West
Public School	1990-91	98.64	91.59	95.24	95.14
	1993-94	94.21	90.17	92.45	91.02
Private School	1990-91	85.72	85.33	80.34	84.32
	1993-94	89.01	81.96	82.09	77.62
Public Administrator	1990-91	98.62	94.25	96.26	96.62
	1993-94	97.57	95.52	97.20	95.21
Private Administrator	1990-91	92.41	91.06	85.71	91.01
	1993-94	92.85	85.52	84.20	87.26
Public Teacher	1990-91	92.10	85.43	91.74	90.37
	1993-94	90.03	84.88	89.92	85.94
Private Teacher	1990-91	86.90	83.51	83.99	81.90
	1993-94	85.05	78.42	79.62	76.38

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public and Private School, Administrator, and Teacher Questionnaires).

- In terms of the **urbanicity characteristics of public schools**, response rates in the public school, administrator, and teacher components were consistently the highest among rural/small town public schools and consistently the lowest in central city public schools in both 1990-91 and 1993-94 (Table 8.5).

Table 8.5 -- Urbanicity response rates: Schools and Staffing Survey 1990-91 and 1993-94, Public School, Administrator, and Teacher Components.

(Response rates in percent)

		Urbanicity		
SASS component	**Survey period**	**Central city**	**Urban fringe/ large town**	**Rural/small town**
Public School	1990-91	92.59	93.52	97.51
	1993-94	89.86	91.06	94.14
Public Administrator	1990-91	93.51	96.19	98.46
	1993-94	95.15	95.67	97.86
Public Teacher	1990-91	88.71	90.20	93.72
	1993-94	85.10	87.31	90.97

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School, Administrator, and Teacher Questionnaires).

- This pattern is reinforced by the related **school size** response rate pattern which shows that for these same components the response rates in smaller schools (of size less than 499) were consistently the highest whereas response rates in large schools (of size 750 or more) were consistently the lowest both in 1990-91 and 1993-94 (Table 8.6).

Table 8.6 -- School size response rates: Schools and Staffing Survey 1990-91 and 1993-94, Public School, Administrator, and Teacher Components.

(Response rates in percent)

		School size			
SASS component	**Survey period**	**1 to 149 students**	**150 to 499 students**	**500 to749 students**	**750 or more students**
Public School	1990-91	97.14	95.79	94.90	92.96
	1993-94	95.20	92.90	91.69	89.36
Public Administrator	1990-91	96.93	97.15	96.81	94.91
	1993-94	98.00	97.04	96.61	94.56
Public Teacher	1990-91	92.34	91.68	90.15	88.79
	1993-94	91.10	89.23	87.66	87.37

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public School, Administrator, and Teacher Questionnaires).

- Similarly, in the case of the Teacher Demand and Shortage Survey, the highest response rates were consistently in districts outside a **metropolitan statistical area** (MSA) whereas the lowest response rates were consistently in districts in central cities in both 1990-91 and 1993-94 (Table 8.7).

Table 8.7 -- Metropolitan statistical area response rates: Schools and Staffing Survey 1990-91 and 1993-94, Teacher Demand and Shortage Component.

(Response rates in percent)

	Metropolitan Statistical Area (MSA)		
Survey period	**MSA central city**	**MSA but not central city**	**Outside of MSA**
1990-91	91.51	92.43	94.37
1993-94	91.45	91.45	94.53

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Demand and Shortage Questionnaires).

- In terms of the **urbanicity characteristics of private school components** , response rates in urban fringe/large town private schools declined significantly from 1990-91 to 1993-94. Also, the private administrator response rates were consistently the lowest among rural/small town private schools in both 1990-91 and 1993-94 (Table 8.8).

Table 8.8 -- Urbanicity response rates: Schools and Staffing Survey 1990-91 and 1993-94, Private School, Administrator, and Teacher Components.

(Response rates in percent)

		Urbanicity		
SASS component	**Survey period**	**Central city**	**Urban fringe/ large town**	**Rural/small town**
Private School	1990-91	82.81	87.41	82.03
	1993-94	82.52	83.56	83.68
Private Administrator	1990-91	90.31	93.47	86.29
	1993-94	89.38	87.33	85.35
Private Teacher	1990-91	84.36	84.11	84.56
	1993-94	78.79	80.41	83.10

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School, Administrator, and Teacher Questionnaires).

- This urbanicity pattern is reinforced by the related**school size** response rate pattern which shows that the response rates for schools of size 150 to 499 students decreased significantly from 1990-91 to 1993-94. Also, for the private administrator component the response rates in the smallest schools (of size less than 149) were consistently the lowest in both 1990-91 and 1993-94 (Table 8.9).

Table 8.9 -- School size response rates: Schools and Staffing Survey 1990-91 and 1993-94, Private School, Administrator, and Teacher Components.

(Response rates in percent)

		School size			
SASS component	**Survey period**	**1 to 149 students**	**150 to 499 students**	**500 to749 students**	**750 or more students**
Private School	1990-91	80.99	87.65	80.27	86.61
	1993-94	80.63	85.70	84.47	83.12
Private Administrator	1990-91	85.98	94.02	92.13	93.28
	1993-94	83.83	90.67	91.51	91.78
Private Teacher	1990-91	78.46	85.90	84.30	87.31
	1993-94	74.95	81.58	82.09	80.55

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Private School, Administrator, and Teacher Questionnaires).

- In terms of **school level** characteristics, response rates for secondary public and private school and administrator components were the highest and response rates for combined public and private school components were the lowest in both 1990-91 and 1993-94 Table 8.10).

Table 8.10 -- School level response rates: Schools and Staffing Survey 1990-91 and 1993-94, Public and Private School, Administrator, and Teacher Components.

(Response rates in percent)

SASS component	Survey period	School level		
		Elementary	Secondary	Combined
Public School	1990-91	95.31	95.51	94.12
	1993-94	92.06	93.14	90.22
Private School	1990-91	87.63	89.75	75.63
	1993-94	86.96	86.96	74.71
Public Administrator	1990-91	96.42	97.53	95.86
	1993-94	96.39	97.09	97.20
Private Administrator	1990-91	92.86	93.89	83.89
	1993-94	91.67	93.08	78.20
Public Teacher	1990-91	90.59	89.85	90.82
	1993-94	88.18	88.39	87.29
Private Teacher	1990-91	84.87	87.12	82.03
	1993-94	80.65	84.04	77.36

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 and 1993-94 (Public and Private School, Administrator, and Teacher Questionnaires).

4. Some additional striking response rate patterns occurred across both the core and new components in the 1993-94 SASS. Some highlights follow:

An examination of **school level** characteristics showed that all components (except the public administrator and public and private student record components) had the highest response rates among secondary schools and the lowest response rates among combined schools and this difference was significant in seven out of these 12 components of the 1993-94 SASS (Tables 4.3 and 4.4).

An examination of **regional characteristics** revealed that all components (except the public library and librarian components and the private student records component) had the highest response rates in the Midwest and this difference was significant in seven out of these 12 components of the 1993-94 SASS (Tables 4.3 and 4.4).

An examination of **school size** characteristics revealed that all private school components (except librarian and student records) and the public library component had significantly lower response rates for small schools than for large schools. However, the public school, administrator, and teacher components had significantly lower response rates for large schools than for small schools.

An examination of a related variable, **urbanicity of school**, revealed similar patterns. The private school teacher component had significantly lower response rates for schools in rural/small towns than for schools in central cities. Public schools, administrators, teachers, libraries, and librarians had significantly lower response rates for schools in central cities than for schools in rural/small towns (Tables 4.3 and 4.4).

Public school components with high **minority enrollment** consistently had lower response rates than public school components with low minority enrollment and in all except the student record component the difference was significant (Table 4.3).

The public schools and administrators for schools that **submitted a teacher listing form** had significantly higher response rates than those that did not (Table 8.11).

Table 8.11 -- Response rates for schools and administrators which did or did not submit a teacher listing form: Schools and Staffing Survey 1993-94, Public School and Administrator Components.

(Response rates in percent)

	Did the school submit a Teacher Listing Form?	
SASS component	**Yes**	**No**
Public School	93.48	61.45
Public Administrator	97.36	77.13

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School and Administrator Questionnaires).

All private school components had significantly higher response rates when the school was a **respondent to the 1991 Private School Survey** (PSS) than when they were not (Table 8.12).

Table 8.12 -- Response rates for 1993-94 Schools and Staffing Survey components which did or did not respond to the 1991-92 Private School Survey.

(Response rates in percent)

	Did the school respond to the 1991-92 Private School Survey	
SASS component	**Yes**	**No**
Private School	85.11	44.14
Private Administrator	89.14	47.84
Private Teacher	80.72	63.83
Private Library	72.32	39.33
Private Librarian	79.22	31.49
Private Student Record	88.78	83.83

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public and Private School , Administrator, Teacher, Library, Librarian, and Student Record Questionnaires).

All private school components (except the student records component) had significantly higher response rates when the **school was sampled in both 1990-91 and 1993-94 than when they were not** (Table 8.13). From the 1990-91 SASS pretest, it was learned that private school response rates were lower among schools that reported for both 1987-88 SASS and 1990-91 pretest. To minimize the impact of this observation, the SASS sample design controls the amount of school overlap between survey rounds. Overlap is controlled so that traditionally high responding private school associations have higher overlap rates than traditionally low responding associations. Thus, our findings show that traditionally high responding associations remain high responding associations even when they have high overlap rates.

Table 8.13 -- Response rates for all private school components which were or were not sampled in the 1990-91 Schools and Staffing Survey: Schools and Staffing Survey 1993-94, Private School, Administrator, Library, Librarian, and Student Record Components.

(Response rates in percent)

	Was the school sampled in the 1990-91 Schools and Staffing Survey	
SASS component	**Yes**	**No**
Private School	87.73	82.24
Private Administrator	91.72	86.75
Private Library	81.03	68.07
Private Librarian	84.38	74.16
Private Student Record	96.07	86.34

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public and Private School , Administrator, Library, Librarian, and Student Record Questionnaires).

Recommendations:

Use regression weighting as an approach for adjustment of survey estimates and consider additional characteristics for the adjustment. One of the important reasons for analyzing response rates is to examine the need to adjust survey estimates if nonrespondents differ from the respondents because estimates constructed from respondents will be biased. Currently, the bias due to nonresponse is corrected by adjusting weights using some of the SASS stratification variables. Given the findings of this study, additional characteristics were identified that should be considered for adjusting survey estimates. Factors used in the 1993-94 SASS weighting adjustments for public schools were state, school level, school size, and urbanicity. Our univariate analysis shows that the variable *minority enrollment* is one of the candidates for adjustment of survey estimates for the public components, while the variable *region* could be considered as a potential candidate for weighting adjustments of estimates in the private school components. Previous SASS nonresponse research conducted by Shen, Parmer, and Tan (1992) and Scheuren et al. (1996) did not use the

variable minority enrollment in their response/ nonresponse models because of the unavailability of this variable on the 1990-91 analysis file. However, since our study included a multivariate analysis for only the public school component, additional multivariate analysis should be considered in order to further examine the univariate results for each of the remaining components. The multivariate analysis would enable understanding the effect of a variable identified as significant in the univariate analysis when other variables are adjusted for simultaneously.

A sensible approach to be explored for making the nonresponse adjustment would be *regression weighting*, which makes use of additional information to reduce the bias and the variance of estimates. Bethlehem (1988) introduces a theoretical framework for regression weighting and shows that proper use of auxiliary information can reduce the nonresponse bias. Fuller, Loughin, and Baker (1994) describe an application of regression weighting and demonstrate that the regression estimator has the potential for large reductions in mean square error relative to the simple direct estimator in the presence of nonresponse. The advantage of this technique over the current nonresponse adjustment method is that it allows for ratio type adjustments across multiple characteristics potentially resulting in a reduction in bias and variance for the estimates. The degree to which the bias is reduced when using this technique depends on the relationship between the auxiliary variables and the variables of interest. Note that this technique does not imply different weights for different variables.

Conduct a small-scale cognitive study designed to find out why certain types of districts, schools, administrators, teachers, libraries, and librarians are less likely to respond. Our findings indicate characteristics of schools that have consistently lower response rates. Understanding the reasons these types of schools have lower response rates is an important step towards developing strategies to improve response rates. A small-scale cognitive study that involves in-depth interviews with a sample of this subset of schools could uncover valuable information on some common reasons for nonresponse that would guide the design of future SASS data collections. An alternative to conducting a small study between rounds is to***gather more detailed information on reasons for nonresponse during the next round of the study***. For instance, if a school refuses to respond during the CATI/telephone follow-up, some probing by the interviewer to identify the reason for the nonresponse could be initiated and recorded. Of course, this alternative would delay steps that could be taken to improve response rates in these types of schools until yet another round of the survey.[70]

5. **Sampled units were more likely to respond when a hierarchically "linked" unit responded.** One of the more striking results of our analysis pertains to the examination of whether response patterns in a survey component are associated with response patterns of hierarchically "linked" components. For example, response rates for both public and private school components were significantly higher for those schools in which administrators responded (public: 94 percent and private: 90 percent) versus those schools in which administrators did not respond (public: 49 percent and private: 34 percent). Another similar example, response rates for both public and private school library components were significantly higher for those schools in which administrators did not respond (public: 68

[70] Shen, Parmer, and Tan (1992), "Characteristics of Nonrespondents in the Schools and Staffing Surveys' School Sample," *Proceedings of the Section on Survey Research Methods, American Statistical Association*

percent and private: 38 percent). In fact, our findings show that all reporting units in the 1993-94 SASS (except the public student records component) have higher response rates when "linked" units respond compared to when "linked" units do not respond, and in a large number of these cases the difference in response rates is significant (see chapter 5).

Recommendation:

Field test monitoring teacher list or administrator mail return rates in order to tailor nonresponse follow-up for associated components. Our findings in terms of nonresponse indicate that hierarchically "linked" components tend to respond in a similar fashion to their associated counterparts. For example, both public and private school, teacher, library, librarian, and student records components tend to respond in a similar fashion to their associated administrator component. Therefore, monitoring the response rates in late December of the final set of teacher listing forms which are mailed first (in September) would indicate the rate and type of follow-up to be assigned to the associated components depending on whether the school had returned the teacher listing form or not. This time frame is feasible, because the first mailing of the school questionnaire is in December, the teacher questionnaire from December to February, and the student questionnaire in March.

Add resources to the components that are at a higher hierarchical order when allocating resources for converting nonrespondents to respondents.

6. **Out-of-scope rates for all public school components were lower than their private counterparts. However, out-of-scope rates were high for both the public school and private school librarian components as well as the private school library component.** Out of scope rates ranged from 2 to 17 percent for the public school components while they ranged from 4 to 47 percent for the private school components. The three components with the highest out-of-scope rates were the private school librarian (47 percent), the private school library component (19 percent), and the public school librarian component (17 percent).

Recommendation:

Explore methods for developing a library/librarian list from sample schools. In 1993-94, schools for the library sample were subsampled from the SASS sample schools. Both the library and librarian surveys were sent to these subsample schools because there was no library/librarian frame available. Other design options to consider include adding a few questions to the teacher listing form that ask if the school has a library and librarian along with a set of definitions of both terms or adding a small form to the introductory letter for sampled schools with these same questions and a request to return the attached form to Census. An additional question may be the name of the head librarian (if one exists). This list would help narrow down the list of schools to which library and librarian forms need to be sent (i.e., that are in-scope for the library and librarian survey) and subsequently reduce the out-of-scope rates for these components.

7. **Private components had significantly higher refusal rates than public components. Public and private teacher components showed high unable-to-contact rates** . Reasons for nonresponse (refusal, unable-to-contact, and other) were tabulated and examined (Table 6.3.1).

The private school component had the highest refusal rate (i.e., 12.5 percent of private school nonresponse was due to refusals). All components except the teacher components had very low unable-to-contact rates. Thus, for the teacher components it was sensible to look at differences in characteristics using a *cooperation rate,* which is the response rate for only those cases that could be contacted.

A comparison of results of tests of association between teacher characteristics and response rates versus teacher characteristics and cooperation rates showed some interesting differences. For the public teacher component, teachers in regular schools had significantly higher *response rates* than teachers in non-regular schools, but teachers in regular schools did not have significantly different *cooperation rates* than teachers in non-regular schools (Table 6.5.2). The reason for this difference in results is that the low response rates for teachers in non-regular schools is due to a higher unable-to-contact rate than teachers in regular schools. For the private teacher component, teachers from rural/small town schools had significantly higher response rates than teachers from central city schools; however, when examining their cooperation rates no differences were found between teachers from rural/small town schools and central city schools (Table 6.5.4). This result can be explained by the fact that the low teacher response rate in central city schools is due to a higher unable-to-contact rate than teachers in rural/small town schools. On the other hand, for the private teacher component, response rates for new teachers versus experienced teachers did not differ significantly, yet cooperation rates did (Table 6.5.4). This result is due to the higher unable-to-contact rate among new teachers than experienced teachers.

Recommendations:

Reasons for refusals should be documented. This information could be used to guide improvements, such as questionnaire design, survey procedures, nonresponse follow-up, etc., in future rounds of SASS.

Steps should be considered for reducing the unable-to-contact rates among new teachers. Steps such as alternative and more vigorous methods of nonresponse follow-up for new teachers should be tested. Also, asking for more contact information on the teacher listing form (such as non-classroom date and time intervals, etc.) should be tested to see if contact rates can be improved.

8. **A multivariate analysis of response rates for the public school component showed that school size, school level, and school type (regular versus non-regular) were the three factors which *jointly* have a significant effect on school response (Tables 7.3.2).** A multivariate logistic regression nonresponse model was fit for the public school component and the resulting significant variables were compared to the univariate level results and the results of the 1990-91 analysis (Table 7.3.3). Although minority enrollment, urbanicity, and region were found to be significant in the univariate analysis, these dropped out in the final multivariate model when other variables were adjusted for simultaneously. In addition, the variable school type was not found to be significant in the univariate analysis, yet was significant in the multivariate model when other variables were adjusted for simultaneously. Looking back at the 1990-91 multivariate modeling results for the public school component,

among the four variables urbanicity, school level, school size, and a state grouping variable considered, school level and school size were not found to be significant. Two major factors in the 1993-94 multivariate analysis make the comparison of the 1990-91 results difficult. First, more variables were available for the 1993-94 analysis than were available for the 1990-91 analysis and in the 1993-94 analysis a state grouping variable was not included. Second, the model fitting methodologies for the two analyses differed in that in the 1993-94 analysis WesVarPC was used to fit the model in which the replicate weights were used to adjust for the design effect, while in the 1990-91 analysis the weights were adjusted by an average design effect in the modeling procedure. In other words, an improved modeling and fitting methodology was used in the 1993-94 nonresponse analyses compared to the analyses performed in 1990-91

Recommendation:

Explore more multivariate regression models for other SASS components to assess the adjusted effects of potential factors on the response rates. Generally, the significant effects shown in a multivariate model rather than a univariate model are considered to represent the adjusted true contribution of each independent factor to the response variable. Therefore, it is necessary to fit multivariate models for all SASS components to find out the adjusted true effects. In addition to modeling overall response rate, mail return rates should also be modeled in a multivariate setting. Further, interactions should be assessed in any multivariate models as should other link functions (e.g., probit) instead of logit function. Interaction effects may exist, and if so it is quite possible to find a stronger relationship between the SASS response rates and the independent factors with a link function other than the logit function. Although, modeling similar to what was done with the public school component could be accomplished using WesVarPC® software with the following features would be necessary to perform more comprehensive modeling: (1) able to use replicate weights to adjust for design effects; (2) able to deal with double the number of cells that the current version of WesVarPC® can include in one model; and (3) able to use more link functions.

Explore the use of latent transition models to estimate the probability of a school responding when it possesses a particular set of characteristics and to estimate the transition response rates of this type of school between the 1990-91 SASS and 1993-94 SASS. Latent transition models for panel data[71] can be applied to the SASS overlap sample between 1990-91 and 1993-94 for each of the components using categorical variables such as a response status indicator, urbanicity, school size, school level, etc. These models can be used to develop two types of estimates: (1) *the probability of a school with particular characteristics responding* or not responding in each of the two rounds of SASS (e.g., the probability that large elementary schools that are located in a large city will respond to the 1990-91 SASS School survey or the probability that small districts outside an MSA will not respond to the 1993-94 SASS TDS, etc.; (2) *the transition rates between the two rounds of SASS among certain types of schools* (e.g., the conditional probability that a small district outside an MSA will not respond to the 1993-94 SASS given that it did not respond to the 1990-91 SASS or the conditional probability that a large elementary school located in a large city will not respond to the 93/94 SASS given that it responded to the 1990/91

[71] Collins and Wugalter (1992), "Latent class models for stage-sequential dynamic latent variables,"*Multivariate Behavioral Research*, 27, 131-157.

SASS, etc.) These probabilities and transitions rates can be calculated now and would be useful in guiding the next SASS sample design and operations.

These models can be fit using a data augmentation algorithm or the EM algorithm. The former algorithm has been implemented in the software by Collins and Schafer[72] and the latter algorithm has been implemented in the software LTA by Collins.[73] The software allows missing values in observed values and the missing values will be imputed in the process of fitting the models. The transition models would require weights for the overlap cases. This is something that would need to be developed. Given that the overlap sample is designed to allow the user to measure change between 1991 and 1994 for various characteristics developing an overlap weight variable would be beneficial to SASS users as well. Note, the regression weighting technique could be used to develop these overlap weights. Although, a limitation of the current software is that it assumes simple random sampling, Schafer indicates the software would probably still be fairly applicable (if not perfect) for this application.

[72] In preparation, 1997.
[73] Collins, Wugalter, and Rousculp (1991), LTA Users' Manual.

Glossary

Listed below are the key definitions necessary to understand this report. Drawn from existing NCES publications, these should be mostly unneeded by those already familiar with SASS.

The terms we define include public and private school, teacher, administrator, local education agency (LEA), Library Media Center/Media Specialist, and Student Records Survey. We also define classifiers such as region, association (for private schools), urbanicity, school level, and school size. Finally, we also define weighted and unweighted response rates.

The sampling frame for SASS differs depending on whether the school is public or private. The frame for the public sector surveys[1] is based on an administrative census conducted annually by NCES, called the Common Core of Data (CCD). The frame for private sector[2] schools is based on the Private School Survey (PSS), which is a census conducted every two years by NCES.

For the 1993-94 SASS, the public sector surveys were based on the 1991-92 CCD and the private sector surveys on the 1991-92 PSS.

Administrator. -- A school administrator questionnaire was sent to the person who is primarily responsible for overseeing the administrative operations and actions of the school. A school administrator sample case was considered out-of-scope if the school did not have an administrator. Also, if a sample administrator's school is considered out-of-scope, the administrator is automatically classified as out-of-scope.

Administrator Response Status. -- This variable indicates whether a school administrator was a respondent or a nonrespondent to the Administrator Component. This variable has two levels: 1) Yes (the school's administrator was a respondent) and 2) No (the school's administrator was a nonrespondent).

Association. -- Private schools were selected using a dual frame approach. A **list frame** was the primary private school frame, and an **area frame** was used to find schools missing from the list frame and thereby compensating for the coverage problems of the list frame. The list frame was further classified by the association membership. There are 19 categories in all:

1. Association of Military Colleges and Schools -- membership in the Association of Military Colleges and Schools;

[1] These are the Teacher Demand and Shortage Survey (TDS), the Public School Survey, the Public School Administrator Survey, the Public School Teacher Survey, the Public School Library Survey, the Public School Librarian Survey, and the Public School Student Records Survey. Each of these data collection efforts is discussed in detail in Chapter 2.

[2] These are the Private School Survey, the Private School Administrator Survey, the Private School Teacher Survey, , the Private School Library Survey, the Private School Librarian Survey, and the Private School Student Records Survey. For details, see Chapter 2.

2. National Catholic Education Association, Jesuit Secondary Education Association -- affiliation as a Catholic or membership in the National Catholic Education Association or the Jesuit Secondary Education Association;

3. Friends Council on Education -- affiliation as Friends or membership in the Friends Council on Education;

4. National Association of Episcopal Schools -- affiliation as Episcopal or membership in the National Association of Episcopal Schools;

5. Hebrew Day Schools -- Membership in the National Society for Hebrew Day Schools;

6. Solomon Schechter Day Schools -- membership in the Solomon Schechter Day Schools;

7. Other Jewish -- other Jewish affiliation;

8. Lutheran Church - Missouri Synod -- membership in the Lutheran Church - Missouri Synod;

9. Evangelical Lutheran Church - Wisconsin Synod; membership in the Evangelical Lutheran Church - Wisconsin Synod or affiliation as Evangelical Lutheran Church - Wisconsin Synod;

10. Evangelical Lutheran Church in America -- membership in the Associations of Evangelical Lutheran Churches or affiliation as Evangelical Lutheran Church in America;

11. Other Lutheran -- other Lutheran affiliation;

12. General Council of Seventh-Day Adventists --affiliation as Seventh-Day Adventist or membership in General Council of Seventh-Day Adventists;

13. Christian Schools International -- membership in Christian Schools International;

14. American Association of Christian Schools International -- membership in the American Association of Christian Schools International;

15. National Association of Private Schools for Exceptional Children -- membership in the National Association of Private Schools for Exceptional Children;

16. American Montessori Society Schools -- membership in the Montessori Society or other Montessori associations;

17. National Association of Independent Schools -- member of the National Association of Independent Schools;

18. National Independent Private School Association -- member of the National Independent Private School Association; and

19. All Else -- member of any other association specified in the PSS or affiliated with a group not listed above or not a member of any association.

BIA School. -- A BIA school is defined as an educational or residential center operated by or under contract with the Bureau of Indian Affairs offering services to Indian students under the authority of a local school board and the direction of a local school supervisor. The school can occupy one or more buildings and includes day schools, boarding schools, previously private schools, cooperative schools, contract schools, and dormitories. A BIA school is considered out-of-scope for SASS if it does not have any students in grades 1-12. Schools offering only kindergarten and prekindergarten were deleted from the sampling frame before the sample was selected. If a school was determined to be out-of-scope after editing its questionnaire, it was deleted from the data file.

Big LEA. -- This variable is for public school districts only and indicates if the sampled district was in an LEA (Local Education Agency) designated as a big LEA by NCES. The criterion for a "big" LEA is that the sampled unit was sampled with certainty and also that nonresponse for the sampled unit would have major effect upon state estimates. There are 226 of these "big LEAs" nationally. This variable indicates the sampled unit's status: 1) Yes (the sampled unit is in a big LEA) or 2) No (the sampled unit is not in a big LEA).

Bilingual/ESL. -- Teachers who use native language to instruct students with limited English proficiency (bilingual); or teachers providing students with limited English proficiency with intensive instruction in English (English as a Second Language -- ESL).

LEA Response Status. -- This variable is for public components only and indicates whether an LEA was a respondent or a nonrespondent to the TDS Component. This variable has two levels: 1) Yes (the school's LEA was a respondent) and 2) No (the school's LEA was a nonrespondent).

LEA Sampled in 1990-91 SASS. -- This variable indicated if an LEA was part of the 1990-91 Schools and Staffing Survey (SASS).

Librarian Response Status. -- This variable indicates whether a school librarian was a respondent or a nonrespondent to the Librarian Component. This variable has two levels: 1) Yes (the school's librarian was a respondent) and 2) No (the school's librarian was a nonrespondent).

Library Media Center. -- A library media center is defined as an organized collection of printed and/or audiovisual and/or computer resources that (a) is administered as a unit, (b) is located in a designated place or places, and (c) makes resources and services available to students, teachers, and administrators. This definition, not the name, is important; it may be called a library, media center, resource center, information center, instructional materials center, learning resource center, or some other name. A library media center sample case is considered out-of-scope if the school does not have a library. Also, if the sample library's school is considered out-of-scope, the library is also classified as out-of-scope.

Library Media Specialist. -- A library media specialist questionnaire was sent to the person who is responsible for the school's library media center. Library media specialists are sometimes referred to as librarians. A library media specialist sample case was considered out-of-scope if the school's library did not have a librarian or if the librarian was not a staff member whose primary assignment was to perform the duties of a library media specialist. This excludes teachers, volunteers, and other staff members.

Library Response Status. -- This variable indicates whether a school library was a respondent or a nonrespondent to the Library/Media Center Component. This variable has two levels: 1) Yes (the school's library was a respondent) and 2) No (the school's library was a nonrespondent).

Local Education Agency (LEA). -- The CCD define an LEA, or public school district, as a government agency administratively responsible for providing public elementary and/or secondary instruction and educational support services. The agency or administrative unit must operate under a public board of education. Districts that do not operate schools but do hire teachers are included. An LEA was considered out-of-scope for the Teacher Demand and Shortage Survey if it did not employ elementary or secondary teachers of any kind, including special education teachers and itinerant teachers.

Main Subject. -- This variable has ten levels and indicates the teacher field for the teacher. Elementary school teachers were classified as 1) general, 2) special education elementary, 3) other elementary, while secondary teachers were classified as 4) mathematics, 5) science, 6) English, 7) social studies, 8) vocational education, 9) special education secondary, and 10) other secondary.

Minority Enrollment. -- This variable is for public components only and has four levels which indicate the percentage of minority enrollment of the sampled school: 1) Less than 5.5%, 2) 5.5 to 20.5%, 3) 20.5 to 50.5%, and 4) greater than 50.5%.

New Teacher. -- This variable indicates if a teacher is new or experienced. A teacher in their first, second, or third year is classified as a new teacher. This variable has two levels: 1) Yes (a new teacher) and 2) No (not a new teacher, an experienced teacher).

9-Level Typology. -- This variable is for the private components only and has nine levels: 1) Catholic - Parochial, 2) Catholic - Diocesan, 3) Catholic - Private, 4) Other Religious -

Conservative Christian, 5) Other Religious - Affiliated, 6) Other Religious - Unaffiliated, 7) Non-sectarian - Regular, 8) Non-sectarian - Special emphasis, and 9) Non-sectarian - Special education.

1991-92 PSS Status. -- This variable is for private schools only and indicates if a school was a respondent or nonrespondent to the 1991-92 Private School Survey (PSS), or if the school was from a source other than the 1991-92 PSS. This variable has three levels: 1) Yes (responded to the 1991 PSS), 2) No (did not respond to the 1991 PSS), and 3) Not in 1991-92 PSS.

Private School. -- A private school is defined by the Private School Survey (PSS) as a school not in the public system that provides instruction for any of grades 1-12 where the instruction is not given exclusively in a private home. A private school is considered out-of-scope for SASS if it did not have any students in grades 1-12, if it operates in a private home that is used as a family residence, or if it is undetermined whether it operates in a private home and its size is very small (enrollment less than 10 or only one teacher). Out-of-scope schools were deleted from the sampling frame before the sample was selected. If a school was determined to be out-of-scope after editing its questionnaire, it was deleted from the data file.

Public School. -- The CCD defines a public school as an institution that provides educational services, has one or more teachers to give instruction, is located in one or more buildings, receives public funds as primary support, has an assigned administrator, and is operated by an education agency. Prison schools and schools operated by the Department of the Defense (DoD) are included in the definition of a public school for SASS, but DoD schools are not included on CCD so are generally not eligible for interview in SASS. A public CCD school is considered out-of-scope for SASS if it does not have any students in grades 1-12 or equivalent ungraded. Schools offering only kindergarten and pre-kindergarten were deleted from the sampling frame before the sample was selected. If a school was determined to be out-of-scope after editing its questionnaire, it was deleted from the data file.

Race of Teacher. -- This variable indicates the race of a teacher. It has six levels: 1) American Indian and Eskimo, 2) Asian/Pacific Islander, 3) Black/non-Hispanic, 4) White/non-Hispanic, 5) Hispanic, and 6) Other.

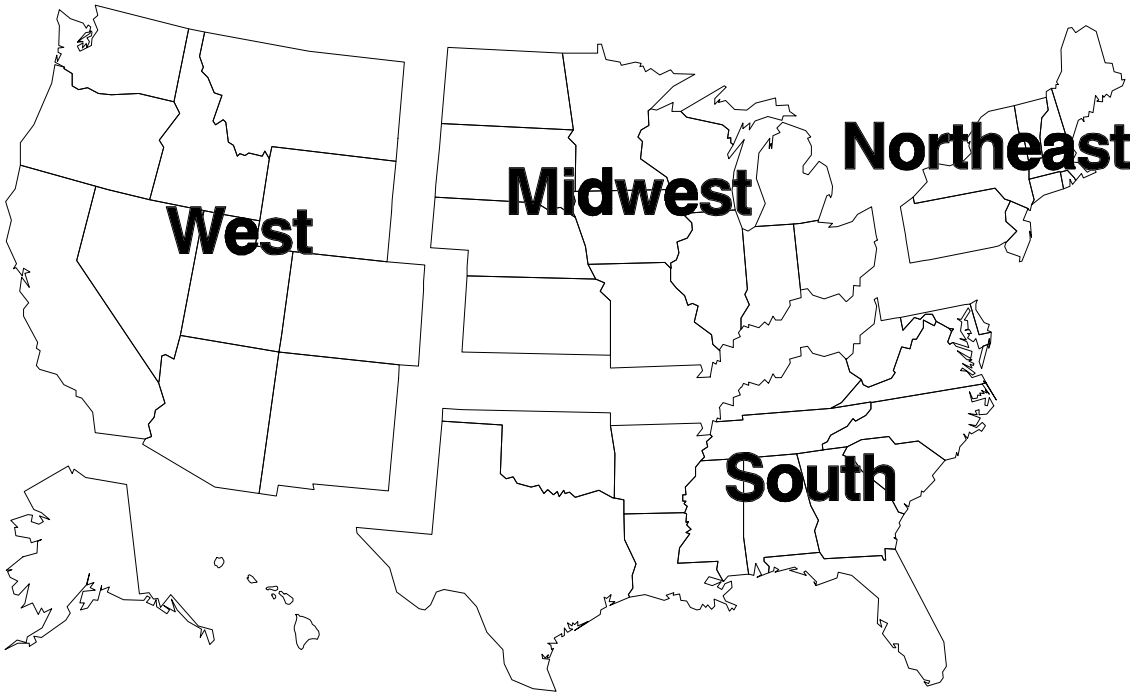
Region. -- The United States is divided into four regions established by the U.S. Bureau of the Census. The following are the regions with the states assigned to each:

> **Northeast** -- Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania
>
> **Midwest** -- Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

South -- Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas

West -- Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, Hawaii

Figure G.1 -- Regions established by the U.S. Bureau of the Census.



SOURCE: U.S. Bureau of the Census.

Response Rates. -- This report includes both unweighted and weighted response rates.

Unweighted response rates were derived by dividing the number of sampled respondents by the total number of eligible samples cases (the number of sample cases minus out-of-scope cases).

Weighted response rates were derived by dividing the sum of the weights for all responding cases by the sum of the weights for all the eligible cases.

School Level. -- The SASS definition of school level was used to categorize CCD data (PSS for private schools). Only data on regular schools was selected. (A regular school is a public elementary/secondary school that does not focus primarily on vocational, special, or

alternative education.). This variable[3] has three categories -- **Elementary**, **Secondary**, and **Combined:**

> **Elementary** -- A school is defined as elementary if it has no grade higher than eight and at least one of grades 1-6.
>
> **Secondary --** A school is defined as secondary if it has no grade lower than seven and at least one of grades 7-12.
>
> **Combined --** A school is defined as combined if it has at least one grade of six or below and at least one grade of nine or above. Schools in which students are ungraded (i.e., not classified by standard grade levels) are also classified as combined.

School Response Status. -- This variable indicates whether a school was a respondent or a nonrespondent to the School Component. This variable has two levels: 1) Yes (the school was a respondent) and 2) No (the school was a nonrespondent).

School Sampled in 1990-91 SASS. -- This variable indicated if a school was part of the 1990-91 Schools and Staffing Survey (SASS).

School Sampled with Certainty. -- This variable indicates if a sample unit school for the administrator, school, teacher, library, librarian, and student components had a 100 percent chance of being in the sample. For the Public Teacher Demand and Shortage Component this indicates if the LEA had a 100 percent chance of being in the sample.

School Size. -- The SASS definition of school size was used to categorize CCD data (PSS for private schools). This variable refers to the number of students (in head counts) enrolled in grades one through 12 on or about Month? and Day?, 199? It has four categories:**1 to 149**, **150 to 499**, **500 to 749**, and **750** plus.[4]

School Type. -- This variable is for public schools only and indicates if a school is 1) regular or 2) non-regular (special education, vocational or technical schools).

Student Records Survey. -- A student records questionnaire was sent to the school administrator or another contact at the sample school for each student in the sample. A student was considered out-of-scope if he/she dropped out, transferred to another school, withdrew, was expelled, was chronically truant, or died.

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[3] Except for the Teacher Demand and Shortage Survey, where size is defined by the number of public schools run by the local education agency (LEA). For LEAs there were two categories: '0 to 5 Schools' and '6 or More Schools'

[4] For the Teacher Demand and Shortage Survey, the LEAs were classified by the number of students into eight categories: '0 to 299', '300 to 599', '600 to 999', '1000 to 2499', 2500 to 4999', '5000 to 9999', '10000 to 24999', '25000 or More'.

Submitted a Teacher List. -- This is a two-level variable (Yes or No) and indicates if a school submitted a teacher list.

Teacher. -- A teacher is defined as any full-time or part-time teacher who teaches in grades K-12. Itinerant teachers are included, as well as long-term substitutes who were filling the role of a regular teacher on an indefinite basis. An itinerant teacher is defined as a teacher who teaches at more than one school. Also included are teaching principals who teach regular classes on a full or part-time basis. Beginning in 1993-94, anyone in the school who teaches grades K-12, but whose primary assignment is something else is also defined to be a teacher. A sample teacher is considered out-of-scope if he/she is a short-term substitute, a student teacher, a nonteaching specialist (e.g., guidance counselor, librarian, nurse, psychologist), a teacher's aide, or in some other professional or support staff position (cooks, custodian, bus driver, dietitian, secretary). A teaching principal is considered out-of-scope only if the principal does not teach a regular class. If a sample school or LEA is out-of-scope, all its teachers are also considered out-of-scope.

Teacher Type. -- This is a five level variable and is used to define the adjustment cells for the teacher survey. The five levels are 1) Asian or Pacific Islander (API), 2) American Indian, Aleut, or Eskimo (AIAE), 3) Bilingual/ESL, 4) New (less than 3 years completed in the teaching profession), and 5) Experienced (3 or more years completed teaching).

3 Level Typology. -- This variable is for private components only and has three levels: 1) Catholic, 2) Nonsectarian, and 3) other religious.

Urbanicity. -- Except for the Teacher Demand and Shortage Survey[5], urbanicity was derived from a seven-category locale code developed by Johnson[6] and used for the CCD/PSS. The locale code was based on the school's mailing address matched to U.S. Bureau of the Census data files containing population density data, Metropolitan Statistical Area (MSA) codes, and a Census code defining urban and rural areas. The following seven categories are used:

1. Large City -- central city of a Metropolitan Statistical Area (MSA) with a population greater than or equal to 400,000 or a population greater than or equal to 6,000 people per square mile.

2. Mid-size City -- central city of an MSA with a population less than 400,000 and a population density less than 6,000 people per square mile.

[5] For the Teacher Demand and Shortage Survey, urbanicity was defined in terms of Metropolitan Statistical Areas (MSAs). An MSA is an area, as defined by the Office of Management and Budget (OMB), with at least 50,000 people or with more than one city with a population totaling at least 50,000. Three urbanicity categories were used: (1) Central City of MSA -- A central city in a MSA, (2) Not a Central City MSA -- Not a central city but in a MSA, and (3) Not an MSA -- An area not in an MSA.

[6] Johnson, F. (1993), Comparison of school locale settings: self vs. assigned,*ASA Proceedings of the Section on Survey and Research Methods,* Alexandria, VA: American Statistical Association.

3. Urban Fringe of Large City -- place within an MSA of a Large Central City and defined as urban by the U.S. Bureau of the Census.

4. Urban Fringe of Mid-size City -- place with in an MSA of a Mid-size Central City and defined as urban by the U.S. Bureau of the Census.

5. Large Town -- town not within an MSA, with a population greater than or equal to 25,000 people.

6. Small Town -- town not within an MSA, with a population less than 25,000 and greater than or equal to 2,500 people.

7. Rural -- a place with less than 2,500 people and coded rural by the U.S. Bureau of the Census.

For this report, these seven locale codes were aggregated into three urbanicity types:

Central city includes urbanicity locale codes Large City and Mid-size City.

Urban fringe/large town includes urbanicity locale codes Urban Fringe of Large City, Urban Fringe of Mid-size City, and Large Town.

Rural/small town includes urbanicity locale codes Small Town and Rural.

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Appendix A

Response Rate Tables

Table A.1 - Teacher Demand and Shortage Questionnaire: Percent of Public Schools in the Responding Local Education Agencies (LEAs), by State and School Characteristics (Weight: Unweighted).

State or Region	Overall	Urbanicity			Schools In LEA		Students in LEA							
		MSA* Central City	MSA Not Central City	Outside of MSA	0 to 4 Schools in LEA	5 or More Schools in LEA	0 to 299 Students	300 to 599 Students	600 to 999 Students	1,000 to 2,499 Students	2,500 to 4,999 Students	5,000 to 9,999 Students	10,000 to 24,999 Students	25,000 or More Students
National	93.10	91.45	91.45	94.53	94.29	91.70	93.63	94.96	94.43	94.66	92.40	90.93	90.87	89.01
Alabama	93.20	88.89	87.88	96.72	92.86	93.33	--	--	100.00	100.00	87.80	96.30	87.50	100.00
Alaska	95.65	--	100.00	95.56	95.00	96.15	88.89	100.00	100.00	100.00	66.67	100.00	100.00	100.00
Arizona	97.85	100.00	97.62	97.96	98.04	97.62	100.00	100.00	100.00	100.00	94.12	100.00	93.33	100.00
Arkansas	97.56	100.00	96.55	97.75	98.89	93.94	100.00	95.00	100.00	100.00	94.12	91.67	100.00	100.00
California	84.47	86.44	83.44	85.71	86.84	83.51	100.00	70.00	93.75	93.75	77.78	78.85	84.62	85.71
Colorado	86.49	57.14	88.89	90.00	87.88	85.37	75.00	90.91	100.00	92.86	88.89	100.00	84.62	60.00
Connecticut	90.91	81.25	93.06	90.91	95.45	87.27	100.00	100.00	80.00	96.43	83.33	95.00	75.00	100.00
Delaware	89.47	--	83.33	92.31	100.00	81.82	--	100.00	100.00	100.00	85.71	75.00	100.00	--
District of Columbia	100.00	100.00	--	--	--	100.00	--	--	--	--	--	--	--	100.00
Florida	98.18	100.00	96.30	100.00	100.00	98.04	--	--	100.00	100.00	100.00	100.00	100.00	95.00
Georgia	97.94	80.00	100.00	98.36	97.37	98.31	--	100.00	100.00	100.00	96.43	100.00	100.00	88.89
Hawaii	100.00	100.00	--	--	--	100.00	--	--	--	--	--	--	--	100.00
Idaho	94.94	100.00	100.00	94.74	93.75	96.77	90.00	90.00	92.31	100.00	100.00	85.71	100.00	--
Illinois	88.11	92.86	86.24	90.32	90.35	84.51	95.24	87.50	100.00	88.00	80.00	87.50	81.82	66.67
Indiana	90.15	100.00	88.71	88.89	89.06	91.18	66.67	100.00	62.50	95.92	90.91	86.96	92.31	100.00
Iowa	90.40	100.00	91.30	89.47	91.30	87.88	100.00	96.77	88.57	77.78	91.67	100.00	100.00	100.00
Kansas	94.55	75.00	91.67	96.34	93.24	97.22	90.00	96.43	94.12	93.10	100.00	100.00	66.67	100.00
Kentucky	98.98	100.00	95.24	100.00	100.00	98.31	--	100.00	100.00	100.00	100.00	100.00	80.00	100.00
Louisiana	87.69	66.67	85.71	92.86	100.00	86.89	--	100.00	--	100.00	94.44	88.24	78.57	71.43
Maine	95.15	100.00	83.33	96.59	96.67	93.02	100.00	100.00	90.00	94.00	94.44	100.00	--	--
Maryland	82.61	100.00	85.71	75.00	--	82.61	--	--	--	--	50.00	100.00	87.50	87.50
Massachusetts	97.42	100.00	96.92	100.00	96.05	98.73	100.00	87.50	100.00	98.04	97.87	100.00	87.50	100.00
Michigan	95.19	93.55	94.95	96.49	95.61	94.52	95.00	90.91	100.00	95.74	94.29	91.67	100.00	100.00
Minnesota	85.12	60.00	82.61	88.57	92.31	72.09	92.31	94.12	86.67	96.43	84.21	75.00	60.00	33.33
Mississippi	97.41	100.00	93.33	97.96	100.00	95.24	--	100.00	100.00	97.37	98.00	95.00	100.00	100.00
Missouri	96.83	100.00	95.92	97.22	98.70	93.88	100.00	94.74	100.00	95.45	100.00	92.86	92.31	100.00
Montana	94.16	100.00	91.67	94.16	94.52	87.50	93.02	96.55	90.00	100.00	80.00	100.00	100.00	--
Nebraska	94.64	80.00	100.00	94.95	94.57	95.00	92.59	96.00	100.00	100.00	100.00	100.00	100.00	50.00
Nevada	100.00	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	--	100.00
New Hampshire	94.74	100.00	93.75	94.55	96.49	89.47	90.91	100.00	100.00	93.33	91.67	100.00	100.00	--
New Jersey	74.83	72.73	75.00	--	75.61	73.91	81.82	66.67	76.47	77.78	78.13	70.83	50.00	100.00
New Mexico	98.31	100.00	100.00	98.00	96.15	100.00	100.00	90.91	100.00	100.00	100.00	100.00	100.00	100.00
New York	91.50	87.50	92.91	89.23	92.00	90.67	83.33	91.67	94.44	91.53	97.92	82.14	87.50	100.00
North Carolina	95.12	100.00	88.46	98.08	88.89	95.89	--	--	50.00	100.00	100.00	95.83	94.74	80.00
North Dakota	97.44	100.00	100.00	97.03	97.20	100.00	95.52	100.00	100.00	100.00	100.00	100.00	100.00	--
Ohio	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Oklahoma	92.64	85.71	94.59	92.00	93.23	89.74	92.31	95.00	97.14	90.00	100.00	77.78	87.50	50.00
Oregon	96.23	80.00	95.45	98.25	96.72	95.56	95.00	100.00	100.00	96.55	94.74	100.00	100.00	66.67
Pennsylvania	90.45	100.00	91.89	82.35	93.24	87.95	0.00	100.00	100.00	94.74	94.12	81.82	60.00	100.00
Rhode Island	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	--
South Carolina	92.75	100.00	96.30	89.47	100.00	91.23	--	100.00	100.00	100.00	84.21	90.00	100.00	100.00
South Dakota	95.54	100.00	100.00	95.15	95.88	93.33	95.00	100.00	93.33	86.67	100.00	--	100.00	--
Tennessee	95.35	100.00	100.00	92.31	100.00	94.20	--	--	100.00	100.00	96.43	87.50	100.00	100.00
Texas	95.52	96.49	94.68	95.68	95.76	95.20	95.08	100.00	90.00	95.00	97.30	93.94	97.50	92.31
Utah	96.77	100.00	100.00	95.00	75.00	100.00	--	--	100.00	83.33	100.00	100.00	100.00	100.00
Vermont	98.88	100.00	100.00	98.72	98.80	100.00	100.00	100.00	92.86	100.00	100.00	--	--	--
Virginia	90.91	92.31	82.76	95.65	86.96	92.31	60.00	100.00	100.00	93.75	89.47	96.00	90.91	88.89
Washington	95.73	100.00	94.74	96.23	98.04	93.94	100.00	100.00	87.50	100.00	85.00	94.74	100.00	100.00
West Virginia	96.36	100.00	100.00	95.45	100.00	95.83	--	--	--	100.00	92.31	94.12	100.00	100.00
Wisconsin	90.48	92.31	93.75	87.69	93.83	84.44	100.00	86.67	95.24	93.33	78.26	92.31	100.00	100.00
Wyoming	91.67	100.00	100.00	91.11	95.65	88.00	85.71	100.00	100.00	85.71	85.71	100.00	100.00	--
Midwest	93.16	93.28	92.45	93.60	94.35	90.84	94.38	95.10	94.39	93.28	92.09	91.08	90.32	84.00
Northeast	91.26	90.54	89.88	93.97	92.61	89.45	93.02	93.27	91.40	92.71	92.55	86.13	75.68	100.00
South	94.75	93.23	93.54	95.55	95.94	93.86	92.97	96.72	96.15	97.19	94.46	93.62	94.44	90.38
West	92.39	87.37	89.86	94.60	93.94	90.83	93.37	94.35	95.65	96.50	88.30	90.00	90.65	86.79

*Metropolitan Statistical Area (MSA).
An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Demand and Shortage Questionnaires).

Table A.2 - Teacher Demand and Shortage Questionnaire: Percent of Public Schools in the Responding Local Education Agencies (LEAs), by State and School Characteristics (Weight: Basic district weight).

State or Region	Overall	Urbanicity			Schools In LEA		Students in LEA							
		MSA* Central City	MSA Not Central City	Outside of MSA	0 to 4 Schools in LEA	5 or More Schools in LEA	0 to 299 Students	300 to 599 Students	600 to 999 Students	1,000 to 2,499 Students	2,500 to 4,999 Students	5,000 to 9,999 Students	10,000 to 24,999 Students	25,000 or More Students
National	93.90	92.45	93.13	94.54	94.74	91.33	95.11	94.66	94.47	94.66	92.22	89.84	90.78	89.01
Alabama	93.44	87.77	88.99	96.54	94.02	93.08	--	--	100.00	100.00	86.66	95.83	87.50	100.00
Alaska	94.31	--	100.00	94.21	92.71	96.18	85.61	100.00	100.00	100.00	66.67	100.00	100.00	100.00
Arizona	98.66	100.00	98.30	98.82	98.95	97.79	100.00	100.00	100.00	100.00	93.43	100.00	93.33	100.00
Arkansas	97.48	100.00	98.25	97.24	97.92	94.19	100.00	93.06	100.00	100.00	94.92	90.88	100.00	100.00
California	90.69	86.65	91.57	89.18	96.23	82.88	100.00	94.56	94.39	93.58	83.43	76.84	85.18	85.77
Colorado	89.27	56.92	93.02	89.65	90.53	86.39	89.22	89.73	100.00	92.33	88.08	100.00	84.62	60.00
Connecticut	93.86	81.98	94.84	95.45	96.87	87.49	100.00	100.00	85.04	95.88	84.37	95.00	75.00	100.00
Delaware	89.47	--	83.33	92.31	100.00	81.82	--	100.00	100.00	100.00	85.71	75.00	100.00	--
District of Columbia	100.00	100.00	--	--	--	100.00	--	--	--	--	--	--	--	100.00
Florida	98.39	100.00	96.43	100.00	100.00	98.19	--	--	100.00	100.00	100.00	100.00	100.00	95.00
Georgia	97.82	80.04	100.00	97.69	97.09	98.73	--	100.00	100.00	100.00	95.14	100.00	100.00	88.89
Hawaii	100.00	100.00	--	--	--	100.00	--	--	--	--	--	--	--	100.00
Idaho	93.99	100.00	100.00	93.83	92.94	96.81	89.44	91.05	92.55	100.00	100.00	85.71	100.00	--
Illinois	92.50	94.63	92.82	91.95	93.94	85.01	99.50	92.58	100.00	87.04	81.12	87.53	80.81	66.67
Indiana	89.08	100.00	90.68	86.24	87.68	92.09	38.20	100.00	67.96	95.43	90.56	86.64	92.32	100.00
Iowa	92.09	100.00	94.29	91.44	92.98	85.59	100.00	96.45	89.30	80.89	90.86	100.00	100.00	100.00
Kansas	93.46	75.00	88.09	95.00	92.59	97.92	86.40	97.48	92.18	91.81	100.00	100.00	66.67	100.00
Kentucky	99.43	100.00	96.85	100.00	100.00	98.65	--	100.00	100.00	100.00	100.00	100.00	80.00	100.00
Louisiana	88.68	66.67	86.38	93.30	100.00	87.15	--	100.00	--	100.00	93.31	88.40	78.57	71.43
Maine	96.38	100.00	85.19	97.37	97.83	92.51	100.00	100.00	90.47	93.92	94.49	100.00	--	--
Maryland	82.51	100.00	85.94	75.35	--	82.51	--	--	--	--	55.83	100.00	87.50	87.50
Massachusetts	97.42	100.00	96.98	100.00	96.71	99.02	100.00	94.10	100.00	98.39	97.42	100.00	87.50	100.00
Michigan	96.65	94.72	95.75	97.84	97.84	92.10	98.97	93.12	100.00	96.66	92.97	90.37	100.00	100.00
Minnesota	89.59	62.12	89.64	90.05	91.97	74.17	91.99	93.51	84.11	97.62	84.09	74.96	59.79	33.33
Mississippi	98.01	100.00	94.10	98.47	100.00	95.57	--	100.00	100.00	98.34	98.24	95.01	100.00	100.00
Missouri	97.92	100.00	98.05	97.85	98.60	93.60	100.00	95.34	100.00	97.06	100.00	92.40	92.19	100.00
Montana	93.86	100.00	94.47	93.75	93.97	87.55	93.23	96.56	93.37	100.00	80.00	100.00	100.00	--
Nebraska	96.88	87.05	100.00	96.93	96.92	95.65	96.98	95.24	100.00	100.00	100.00	100.00	100.00	50.00
Nevada	100.00	--	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	--	100.00
New Hampshire	86.68	100.00	97.55	82.39	86.31	89.55	73.23	100.00	100.00	93.36	91.67	100.00	100.00	--
New Jersey	76.87	77.92	76.85	--	77.16	75.82	95.46	68.67	70.00	78.91	76.10	74.71	51.08	100.00
New Mexico	97.78	100.00	100.00	97.48	96.23	100.00	100.00	91.32	100.00	100.00	100.00	100.00	100.00	100.00
New York	94.03	85.74	94.97	92.64	94.17	93.63	87.39	94.36	98.70	92.76	98.05	85.59	90.56	100.00
North Carolina	96.33	100.00	91.16	98.34	95.48	96.53	--	--	69.98	100.00	100.00	95.26	94.75	80.00
North Dakota	95.92	100.00	100.00	95.21	95.76	100.00	94.41	100.00	100.00	100.00	100.00	100.00	100.00	--
Ohio	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Oklahoma	94.17	94.64	95.99	93.45	94.47	90.52	93.58	96.08	98.11	89.98	100.00	78.11	87.50	50.00
Oregon	98.04	80.00	97.01	99.22	98.44	95.66	98.31	100.00	100.00	97.15	94.76	100.00	100.00	66.67
Pennsylvania	90.27	100.00	93.91	78.50	90.56	89.80	0.00	100.00	100.00	95.62	93.44	81.74	57.40	100.00
Rhode Island	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	--
South Carolina	93.54	100.00	96.05	91.42	100.00	90.60	--	100.00	100.00	100.00	84.47	90.14	100.00	100.00
South Dakota	95.88	100.00	100.00	95.59	96.11	93.54	95.41	100.00	92.93	87.07	100.00	--	100.00	--
Tennessee	96.91	100.00	100.00	95.21	100.00	94.79	--	--	100.00	100.00	96.62	88.36	100.00	100.00
Texas	96.55	97.31	97.88	95.76	96.88	95.37	96.01	100.00	92.40	96.54	96.61	95.24	97.79	92.33
Utah	95.93	100.00	100.00	93.99	78.15	100.00	--	--	100.00	82.08	100.00	100.00	100.00	100.00
Vermont	99.08	100.00	100.00	99.01	99.06	100.00	100.00	100.00	90.36	100.00	100.00	--	--	--
Virginia	88.43	94.31	84.02	89.15	84.77	92.47	61.11	100.00	100.00	96.60	90.19	96.34	90.96	88.89
Washington	97.69	100.00	95.40	98.49	99.22	93.44	100.00	100.00	93.42	100.00	86.25	94.85	100.00	100.00
West Virginia	96.36	100.00	100.00	95.45	100.00	95.83	--	--	--	100.00	92.31	94.12	100.00	100.00
Wisconsin	91.01	92.35	95.06	88.42	93.42	79.37	100.00	88.03	95.40	93.18	75.80	92.91	100.00	100.00
Wyoming	85.17	100.00	100.00	84.40	82.97	88.22	63.80	100.00	100.00	85.73	85.71	100.00	100.00	--
Midwest	94.68	94.68	95.08	94.47	95.40	90.99	96.50	94.89	95.46	94.15	91.96	91.23	90.53	84.00
Northeast	90.63	91.42	89.86	92.07	90.80	90.13	90.23	89.81	87.82	92.40	92.70	85.88	76.30	100.00
South	95.60	94.83	95.75	95.60	96.29	94.29	93.09	97.43	96.77	97.78	94.69	94.08	94.67	90.39
West	93.77	87.25	93.22	94.74	95.75	88.68	95.98	96.02	96.01	95.87	87.40	85.16	90.12	86.81

*Metropolitan Statistical Area (MSA).
An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Demand and Shortage Questionnaires).

Table A.3 - Public School Administrator Questionnaire: Percent of Public School Administrators Responding, by State and School Characteristics (Weight: Unweighted).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	96.63	94.71	96.18	97.69	96.29	96.99	96.74	97.39	97.32	96.08	95.78
Alabama	99.15	100.00	100.00	98.61	100.00	100.00	97.06	100.00	98.51	100.00	98.80
Alaska	95.92	97.06	83.33	96.15	93.67	100.00	96.34	94.67	97.33	93.33	100.00
Arizona	96.04	95.79	100.00	94.67	94.34	98.88	85.71	90.91	96.61	93.88	97.59
Arkansas	98.78	100.00	100.00	98.35	98.77	98.73	100.00	92.86	98.85	100.00	100.00
California	94.76	94.44	95.21	94.44	93.08	95.34	96.15	98.46	94.74	96.30	92.74
Colorado	91.33	95.35	84.38	95.45	85.37	96.20	100.00	100.00	93.24	87.18	88.37
Connecticut	95.00	93.75	92.16	98.36	96.25	94.74	75.00	100.00	93.33	97.50	95.00
Delaware	98.59	100.00	100.00	97.06	97.87	100.00	100.00	100.00	100.00	96.00	100.00
District of Columbia	84.38	84.38	--	--	84.09	88.24	66.67	--	91.18	71.43	88.89
Florida	99.16	99.17	98.55	100.00	97.50	100.00	100.00	100.00	100.00	97.73	99.21
Georgia	98.88	96.77	100.00	98.96	100.00	97.44	100.00	100.00	100.00	100.00	98.00
Hawaii	95.65	96.15	96.15	92.86	94.44	100.00	100.00	100.00	100.00	84.62	100.00
Idaho	98.80	100.00	97.14	99.14	98.75	98.75	100.00	100.00	100.00	97.22	96.77
Illinois	97.23	97.14	96.15	98.73	97.58	94.87	100.00	100.00	98.18	100.00	90.38
Indiana	97.73	95.35	97.87	98.84	97.47	97.53	100.00	100.00	100.00	92.98	100.00
Iowa	98.79	100.00	93.75	99.14	98.72	98.72	100.00	100.00	99.03	95.24	100.00
Kansas	92.59	87.50	85.71	94.40	91.46	93.67	100.00	95.35	94.52	88.46	85.00
Kentucky	94.30	92.31	88.89	96.19	93.42	96.15	75.00	88.89	98.25	95.65	89.13
Louisiana	98.21	96.88	100.00	98.41	96.34	100.00	98.41	93.33	98.90	98.08	98.46
Maine	94.12	87.50	100.00	94.44	91.46	96.83	100.00	91.30	96.59	88.89	93.33
Maryland	95.06	95.65	93.07	100.00	94.87	96.05	87.50	75.00	95.35	95.12	95.95
Massachusetts	97.75	96.08	99.01	97.14	100.00	96.40	100.00	100.00	100.00	100.00	93.59
Michigan	96.63	92.11	96.67	98.18	98.77	94.87	95.92	100.00	97.96	98.15	90.24
Minnesota	97.60	100.00	92.50	99.11	100.00	94.74	100.00	100.00	98.21	100.00	91.89
Mississippi	98.06	100.00	100.00	97.47	97.67	98.75	97.50	100.00	96.15	98.00	100.00
Missouri	98.30	100.00	96.08	99.05	97.53	98.75	100.00	100.00	97.73	96.77	100.00
Montana	96.02	94.74	100.00	95.83	96.70	95.24	100.00	95.65	97.47	85.71	100.00
Nebraska	97.26	98.39	96.15	96.88	95.24	98.70	100.00	98.18	98.36	83.33	100.00
Nevada	93.50	87.93	100.00	98.08	91.36	97.30	100.00	100.00	100.00	88.89	91.18
New Hampshire	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
New Jersey	96.86	96.88	95.69	100.00	96.20	98.75	93.75	100.00	94.52	100.00	96.77
New Mexico	95.91	94.59	92.31	97.89	96.00	97.01	75.00	94.12	96.72	95.56	95.83
New York	90.03	82.73	90.24	96.64	93.98	89.21	87.64	100.00	92.23	92.59	85.59
North Carolina	97.55	94.00	100.00	98.46	96.88	97.62	100.00	100.00	98.36	96.43	97.37
North Dakota	98.25	95.65	100.00	98.52	98.88	97.56	--	98.68	98.53	91.67	100.00
Ohio	96.81	94.44	98.21	97.44	96.15	97.50	96.67	100.00	95.18	100.00	95.65
Oklahoma	95.05	87.50	95.74	96.19	95.00	95.10	--	95.77	95.05	89.47	100.00
Oregon	98.27	94.29	98.61	100.00	96.34	100.00	100.00	95.65	98.55	97.37	100.00
Pennsylvania	96.15	93.94	96.72	96.59	96.10	96.15	96.30	80.00	95.65	98.55	95.16
Rhode Island	93.94	92.31	96.15	90.48	93.42	95.24	100.00	83.33	93.75	96.00	95.00
South Carolina	96.91	100.00	87.50	99.06	96.25	97.47	100.00	100.00	98.18	95.35	96.61
South Dakota	98.82	100.00	100.00	98.68	98.85	98.78	100.00	98.65	98.41	100.00	100.00
Tennessee	97.86	94.12	97.50	100.00	97.47	97.50	100.00	100.00	95.45	100.00	98.57
Texas	96.28	94.48	96.23	97.56	96.35	95.04	97.24	100.00	98.61	95.29	92.31
Utah	98.86	93.94	100.00	100.00	100.00	97.56	100.00	100.00	100.00	100.00	97.65
Vermont	94.17	100.00	--	93.94	94.67	91.30	100.00	93.75	95.65	100.00	75.00
Virginia	97.21	96.15	100.00	96.15	96.10	98.75	95.45	92.31	96.43	97.78	98.46
Washington	98.57	98.25	98.39	98.90	98.86	97.56	100.00	100.00	98.70	98.21	98.36
West Virginia	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Wisconsin	99.43	97.30	100.00	100.00	98.81	100.00	100.00	100.00	100.00	97.30	100.00
Wyoming	98.53	100.00	100.00	98.18	98.80	98.11	--	97.50	98.36	100.00	100.00
Midwest	97.45	96.45	96.17	98.30	97.52	97.16	98.46	98.75	98.02	96.67	95.49
Northeast	94.94	90.88	95.46	96.51	95.77	94.98	91.38	94.95	95.67	96.77	92.24
South	97.17	95.27	97.03	98.05	96.58	97.58	97.77	97.03	97.51	96.56	97.28
West	96.24	94.91	95.83	97.19	95.16	97.35	96.91	96.84	97.52	94.40	95.81

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Questionnaires).

Table A.4 - Public School Administrator Questionnaire: Percent of Public School Administrators Responding, by State and School Characteristics (Weight: Basic administrator weight).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	96.60	95.15	95.67	97.86	96.39	97.09	97.20	98.00	97.04	96.61	94.56
Alabama	99.58	100.00	100.00	99.23	100.00	100.00	96.48	100.00	99.40	100.00	99.18
Alaska	95.85	97.10	82.70	96.03	92.53	100.00	97.21	95.42	96.96	92.98	100.00
Arizona	95.19	94.66	100.00	93.71	93.96	99.18	90.75	98.64	96.24	91.49	96.91
Arkansas	98.43	100.00	100.00	97.98	98.87	97.73	100.00	92.63	98.87	100.00	100.00
California	94.16	93.09	94.57	94.92	93.01	96.58	98.41	99.73	91.79	96.25	91.20
Colorado	89.37	96.74	81.97	92.09	85.75	97.67	100.00	100.00	90.17	83.90	84.25
Connecticut	95.93	95.51	93.05	99.06	96.39	94.77	88.93	100.00	95.22	96.49	96.51
Delaware	98.48	100.00	100.00	96.78	97.79	100.00	100.00	100.00	100.00	95.63	100.00
District of Columbia	85.83	85.83	--	--	85.30	90.22	62.44	--	92.11	72.30	87.62
Florida	98.21	98.14	96.94	100.00	97.50	100.00	100.00	100.00	100.00	96.58	98.23
Georgia	99.55	98.79	100.00	99.57	100.00	97.53	100.00	100.00	100.00	100.00	98.59
Hawaii	95.71	96.39	96.11	92.97	94.51	100.00	100.00	100.00	100.00	84.65	100.00
Idaho	99.23	100.00	97.77	99.51	99.37	98.93	100.00	100.00	100.00	97.95	95.53
Illinois	97.81	97.15	97.04	98.95	98.30	95.99	100.00	100.00	98.25	100.00	90.18
Indiana	97.86	93.83	98.64	99.39	97.92	97.50	100.00	100.00	100.00	92.83	100.00
Iowa	99.07	100.00	94.27	99.45	99.21	98.73	100.00	100.00	99.36	94.83	100.00
Kansas	93.52	91.80	86.31	94.65	92.95	94.85	100.00	95.76	94.71	83.37	85.05
Kentucky	94.66	97.32	87.64	95.63	93.93	97.07	76.84	96.27	97.70	94.33	85.40
Louisiana	97.60	96.75	100.00	97.29	96.68	100.00	98.26	95.67	98.34	97.16	96.85
Maine	93.34	86.65	100.00	93.51	92.11	96.44	100.00	90.69	96.90	85.38	85.36
Maryland	95.21	94.42	93.48	100.00	95.30	95.60	86.07	76.48	95.09	95.99	95.09
Massachusetts	99.41	99.13	99.73	99.07	100.00	97.09	100.00	100.00	100.00	100.00	95.04
Michigan	98.01	93.65	98.98	99.33	98.58	96.50	96.08	100.00	98.05	99.88	91.96
Minnesota	98.92	100.00	95.34	99.74	100.00	96.58	100.00	100.00	99.51	100.00	92.27
Mississippi	98.25	100.00	100.00	97.69	98.30	98.39	97.51	100.00	96.90	98.95	100.00
Missouri	97.90	100.00	94.84	98.77	97.42	98.96	100.00	100.00	96.99	98.25	100.00
Montana	95.57	96.03	100.00	95.22	95.63	95.48	100.00	94.96	96.90	89.53	100.00
Nebraska	96.16	98.35	93.40	98.48	94.70	99.08	100.00	95.57	98.28	84.01	100.00
Nevada	93.72	87.97	100.00	98.22	91.91	97.89	100.00	100.00	100.00	88.80	90.59
New Hampshire	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
New Jersey	96.34	95.40	95.40	100.00	95.73	98.83	96.08	100.00	95.56	100.00	94.86
New Mexico	96.29	97.23	91.19	97.73	96.11	98.04	68.53	98.23	96.13	95.70	95.35
New York	92.79	90.78	88.93	98.34	94.51	88.41	89.19	100.00	95.27	93.24	87.57
North Carolina	97.50	91.00	100.00	99.77	96.87	99.33	100.00	100.00	98.23	96.81	96.65
North Dakota	98.74	95.27	100.00	99.05	99.26	97.90	--	98.92	99.50	89.90	100.00
Ohio	96.13	94.60	97.32	96.14	95.54	97.55	97.89	100.00	94.08	100.00	97.73
Oklahoma	94.83	88.65	95.58	96.16	95.02	94.47	--	95.73	95.32	87.59	100.00
Oregon	96.99	92.79	96.23	100.00	95.92	100.00	100.00	92.90	98.18	97.31	100.00
Pennsylvania	96.33	93.77	96.76	96.88	96.38	96.60	90.38	71.22	94.91	99.07	94.55
Rhode Island	93.93	92.23	96.08	90.81	93.09	95.94	100.00	86.92	94.37	96.13	94.68
South Carolina	96.85	100.00	84.08	99.49	96.35	98.08	100.00	100.00	97.59	95.51	96.03
South Dakota	98.90	100.00	100.00	98.82	99.02	98.75	100.00	99.02	98.32	100.00	100.00
Tennessee	97.36	93.41	96.28	100.00	97.30	97.04	100.00	100.00	95.08	100.00	98.89
Texas	96.86	95.27	95.73	98.48	96.87	96.56	97.93	100.00	99.82	96.04	91.91
Utah	99.48	97.21	100.00	100.00	100.00	98.31	100.00	100.00	100.00	100.00	98.48
Vermont	94.09	100.00	--	93.88	94.63	90.69	100.00	92.29	95.63	100.00	75.92
Virginia	96.00	98.41	100.00	92.55	95.02	99.13	92.66	96.67	93.79	96.81	99.02
Washington	98.69	97.27	99.15	99.27	98.91	97.97	100.00	100.00	98.22	98.94	98.45
West Virginia	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Wisconsin	99.39	96.56	100.00	100.00	99.14	100.00	100.00	100.00	100.00	97.04	100.00
Wyoming	98.12	100.00	100.00	97.80	98.38	97.52	--	97.62	98.07	100.00	100.00
Midwest	97.57	96.05	96.80	98.44	97.56	97.52	98.70	98.51	97.64	97.69	95.21
Northeast	95.52	93.55	94.66	97.43	96.02	94.32	92.12	94.79	96.26	96.69	91.86
South	97.20	95.88	96.61	98.12	96.99	97.68	97.81	98.11	97.84	96.79	96.21
West	95.21	94.19	94.55	96.50	94.13	97.50	98.12	97.96	95.09	95.22	93.17

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Administrator Questionnaires).

Table A.5 - Private School Administrator Questionnaire: Percent of Private School Administrators Responding, by Type and School Characteristics (Weight: Unweighted).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	90.29	91.05	89.74	89.76	92.05	93.32	86.00	88.25	91.08	92.62	92.42
Area Frame	80.51	86.67	82.00	65.22	88.24	87.50	72.88	79.07	82.76	100.00	100.00
Association of Military Colleges and Schools of the U.S.	88.89	75.00	80.00	100.00	66.67	93.33	88.89	50.00	90.48	100.00	100.00
National Catholic Education Association, Jesuit Secondary	93.33	92.82	92.92	95.54	92.55	94.81	93.62	93.20	92.78	94.21	95.74
Friends Council on Education	98.61	100.00	97.06	100.00	100.00	100.00	96.97	100.00	94.44	100.00	100.00
National Association of Episcopal Schools	89.11	89.58	86.84	93.33	90.48	100.00	82.50	85.00	87.10	100.00	100.00
National Society of Hebrew Day Schools	87.04	85.71	91.89	0.00	90.00	85.29	78.57	73.91	90.91	93.33	75.00
Solomon Schechter Day Schools	98.00	95.00	100.00	100.00	97.73	100.00	100.00	100.00	96.55	100.00	100.00
Other Jewish	83.15	82.61	83.72	--	88.37	81.25	76.67	90.91	86.49	44.44	80.00
Lutheran Church - Missouri Synod	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	--
Evangelical Lutheran Church - Wisconsin	94.68	96.15	88.89	97.56	94.87	100.00	66.67	94.03	96.15	--	100.00
Evangelical Lutheran Church in America	97.92	100.00	95.00	100.00	97.67	100.00	100.00	97.56	98.08	100.00	--
Other Lutheran	98.28	100.00	100.00	94.44	97.78	100.00	100.00	100.00	90.00	100.00	--
General Conference of Seventh-Day Adventists	95.65	100.00	100.00	90.48	97.22	91.30	96.97	93.22	100.00	--	--
Christian Schools International	83.05	80.00	89.36	77.78	78.38	93.75	83.08	70.83	90.38	90.00	100.00
American Association of Christian Schools	80.00	83.33	80.00	76.47	85.71	60.00	78.46	76.27	81.08	100.00	100.00
National Association of Private Schools for Exceptional Children	96.13	100.00	94.20	93.75	75.00	100.00	96.58	96.85	92.59	100.00	--
American Montessori Society, other Montessori	88.89	94.29	82.05	100.00	88.06	--	92.86	89.66	86.96	--	--
National Association of Independent Schools	89.58	90.91	86.73	92.50	90.91	90.38	88.96	88.00	89.36	92.31	87.80
National Independent Private Schools Association	87.64	90.00	84.21	90.91	83.72	100.00	90.00	83.78	90.91	83.33	100.00
All Else	81.90	85.21	79.63	79.31	87.63	93.10	77.73	80.23	83.21	92.86	78.57
Catholic - Parochial	92.42	90.21	92.81	96.04	92.52	93.88	83.33	92.42	92.51	92.86	90.00
Catholic - Diocesan	93.45	93.28	91.74	97.87	91.72	95.08	100.00	100.00	92.11	93.33	96.97
Catholic - Private	92.77	95.12	93.06	75.00	86.67	94.49	87.50	72.22	92.96	97.14	97.62
Other Religious - Conservative Christian	85.09	91.60	82.14	80.22	90.65	95.00	81.03	83.24	85.95	90.00	100.00
Other Religious - Affiliated	89.89	88.60	92.73	86.67	91.93	92.17	84.73	87.45	91.57	88.46	92.31
Other Religious - Unaffiliated	89.46	91.41	87.60	89.26	95.28	93.48	76.79	86.12	93.28	100.00	92.31
Non-sectarian - Regular	88.19	88.61	86.62	90.63	88.24	90.16	87.50	87.01	88.42	93.22	81.58
Non-sectarian - Special emphasis	90.91	92.68	85.07	100.00	90.91	81.82	92.21	90.18	91.07	100.00	100.00
Non-sectarian - Special education	93.55	98.31	90.53	93.75	100.00	100.00	93.41	95.54	85.71	0.00	--
Catholic	92.81	92.20	92.53	95.00	92.15	94.63	89.36	90.57	92.44	94.26	95.79
Other religious	88.67	89.89	89.17	85.84	92.75	92.82	81.57	85.87	90.83	90.70	93.33
Non-sectarian	90.22	91.64	87.50	93.50	89.42	89.33	90.74	91.91	88.69	92.06	83.72
Midwest	93.92	94.09	92.81	95.22	94.39	95.71	90.96	93.09	94.99	88.52	97.83
Northeast	88.26	87.06	88.86	89.58	90.84	89.47	83.76	86.36	89.40	87.91	87.72
South	89.00	91.36	88.59	83.33	89.94	94.64	86.68	84.41	90.34	100.00	89.06
West	89.78	92.80	87.75	84.29	91.86	95.51	82.47	88.13	88.98	95.35	100.00

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Administrator Questionnaires

Table A.6 - Private School Administrator Questionnaire: Percent of Private School Administrators Responding, by Type and School Characteristics (Weight: Basic administrator weight).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	87.62	89.38	87.33	85.35	91.67	93.08	78.20	83.83	90.67	91.51	91.78
Area Frame	75.09	89.20	80.13	58.70	91.81	92.15	62.89	72.77	85.34	100.00	100.00
Association of Military Colleges and Schools of the U.S.	88.89	75.00	80.00	100.00	66.67	93.33	88.89	50.00	90.48	100.00	100.00
National Catholic Education Association, Jesuit Secondary	92.85	91.17	93.50	95.05	92.63	94.77	90.38	92.95	92.71	92.38	96.02
Friends Council on Education	98.61	100.00	97.06	100.00	100.00	100.00	96.97	100.00	94.44	100.00	100.00
National Association of Episcopal Schools	85.77	92.31	84.14	72.00	90.22	100.00	72.09	74.18	89.62	100.00	100.00
National Society of Hebrew Day Schools	85.88	86.21	88.17	0.00	90.36	83.98	74.82	75.80	87.83	96.47	88.13
Solomon Schechter Day Schools	98.00	95.00	100.00	100.00	97.73	100.00	100.00	100.00	96.55	100.00	100.00
Other Jewish	77.57	76.88	78.43	--	89.75	76.13	60.94	85.69	75.88	34.59	81.30
Lutheran Church - Missouri Synod	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	--
Evangelical Lutheran Church - Wisconsin	94.83	96.29	92.00	95.61	94.73	100.00	80.25	94.75	95.14	--	100.00
Evangelical Lutheran Church in America	98.25	100.00	95.76	100.00	98.03	100.00	100.00	98.18	98.21	100.00	--
Other Lutheran	98.28	100.00	100.00	94.44	97.78	100.00	100.00	100.00	90.00	100.00	--
General Conference of Seventh-Day Adventists	93.23	100.00	100.00	87.46	93.36	89.81	93.74	91.81	100.00	--	--
Christian Schools International	73.47	77.30	77.00	64.82	69.12	81.57	79.73	63.86	90.16	92.93	100.00
American Association of Christian Schools	81.90	85.91	79.70	81.11	89.64	63.68	80.52	80.28	81.97	100.00	100.00
National Association of Private Schools for Exceptional Children	96.71	100.00	94.31	96.42	71.65	100.00	97.74	97.11	94.06	100.00	--
American Montessori Society, other Montessori	89.85	95.66	80.53	100.00	88.97	--	92.24	89.89	89.67	--	--
National Association of Independent Schools	90.23	92.34	86.68	92.72	91.84	90.22	89.36	87.39	90.73	92.17	88.51
National Independent Private Schools Association	83.79	83.89	81.92	90.91	76.70	100.00	90.32	78.76	87.71	83.32	100.00
All Else	81.55	85.02	79.69	78.84	90.49	95.41	74.98	80.59	83.31	90.30	76.97
Catholic - Parochial	92.41	89.86	93.53	95.31	92.66	94.36	74.92	90.89	92.73	92.64	93.70
Catholic - Diocesan	93.34	91.43	93.49	97.00	92.56	95.25	100.00	100.00	92.17	91.88	97.09
Catholic - Private	89.38	91.81	91.40	72.08	87.85	93.84	76.12	71.32	92.96	92.33	97.08
Other Religious - Conservative Christian	82.65	92.65	76.82	76.49	89.26	98.86	78.08	80.57	84.78	97.32	100.00
Other Religious - Affiliated	81.90	84.78	84.72	74.63	85.51	89.30	71.83	75.75	90.28	80.75	92.43
Other Religious - Unaffiliated	83.58	85.72	84.07	81.67	96.43	91.18	64.42	81.46	88.14	100.00	79.20
Non-sectarian - Regular	90.64	85.89	94.42	90.95	93.91	91.64	85.97	92.52	89.41	94.34	77.94
Non-sectarian - Special emphasis	88.97	90.67	80.41	100.00	92.01	76.54	87.01	87.47	93.39	100.00	100.00
Non-sectarian - Special education	88.54	98.40	79.90	98.11	100.00	100.00	88.47	92.41	64.98	0.00	--
Catholic	92.40	90.51	93.29	94.64	92.51	94.52	81.68	90.78	92.58	92.34	96.05
Other religious	82.67	88.05	81.41	77.87	89.98	91.47	73.20	79.43	87.76	91.60	91.40
Non-sectarian	89.69	89.84	87.29	95.11	93.22	89.40	87.18	90.53	88.95	88.49	79.57
Midwest	92.85	95.24	91.70	91.82	94.12	95.49	87.99	89.74	95.75	90.46	98.50
Northeast	85.52	83.72	86.29	87.05	91.65	89.17	69.88	83.62	86.76	84.43	91.12
South	84.20	88.27	84.72	76.52	87.49	95.05	79.31	77.34	90.01	100.00	83.43
West	87.26	90.68	85.56	82.09	92.02	94.76	74.27	84.73	89.16	92.28	100.00

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Administrator Questionnaires

Table A.7 - Public School Questionnaire: Percent of Responding Public Schools, by State and School Characteristics (Weight: Unweighted).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	91.97	89.01	90.31	94.05	91.69	92.72	90.55	92.97	93.13	91.64	90.14
Alabama	95.73	94.44	92.59	97.22	94.05	96.34	97.06	100.00	97.01	96.20	93.98
Alaska	86.29	88.24	66.67	86.62	78.48	91.43	91.57	90.79	85.33	73.33	93.75
Arizona	92.20	89.47	93.94	94.81	90.57	94.38	90.00	85.71	93.22	93.88	91.57
Arkansas	95.12	100.00	80.00	95.87	95.06	94.94	100.00	85.71	93.10	100.00	100.00
California	86.70	87.59	86.98	84.78	88.46	86.08	85.37	88.41	89.47	90.24	83.24
Colorado	93.18	93.02	90.63	95.65	90.24	95.00	100.00	94.74	96.00	89.74	90.70
Connecticut	91.93	89.80	92.16	93.44	92.50	90.91	100.00	100.00	96.05	92.50	82.50
Delaware	88.73	87.50	89.66	88.24	87.23	94.44	83.33	83.33	84.62	92.00	88.89
District of Columbia	84.62	84.62	--	--	84.09	88.24	75.00	100.00	91.18	71.43	88.89
Florida	93.83	93.44	94.37	94.00	95.00	93.42	93.10	92.00	91.49	91.11	96.03
Georgia	93.85	96.77	94.23	92.71	93.83	94.87	90.00	100.00	90.32	97.87	93.00
Hawaii	91.40	92.59	90.38	92.86	93.06	82.35	100.00	100.00	95.65	88.46	90.48
Idaho	93.49	100.00	91.67	93.16	91.36	95.00	100.00	88.00	94.81	88.89	100.00
Illinois	93.70	92.96	91.35	97.47	94.35	89.74	98.08	100.00	93.64	95.56	86.54
Indiana	93.26	84.09	93.62	97.70	92.50	97.53	76.47	75.00	94.29	91.23	95.74
Iowa	95.76	90.91	87.50	98.28	96.15	94.87	100.00	100.00	95.15	100.00	87.50
Kansas	91.98	81.25	80.95	95.20	89.02	94.94	100.00	100.00	87.67	96.15	85.00
Kentucky	92.55	85.19	92.86	94.34	90.91	93.75	100.00	100.00	93.10	89.13	93.48
Louisiana	92.41	84.62	96.97	95.24	89.02	92.31	96.88	93.75	91.21	96.15	90.77
Maine	92.95	88.24	100.00	92.97	90.24	96.97	87.50	86.96	95.56	85.71	100.00
Maryland	80.84	70.83	77.14	97.37	86.08	77.50	62.50	50.00	84.09	92.68	74.36
Massachusetts	93.27	90.20	93.14	95.71	93.59	92.81	100.00	100.00	96.30	91.67	91.03
Michigan	94.39	94.87	96.67	93.04	97.62	93.59	90.38	94.74	95.96	94.55	90.24
Minnesota	93.02	66.67	92.50	96.58	91.76	93.67	100.00	100.00	96.61	92.59	83.78
Mississippi	94.20	89.47	100.00	93.71	94.19	93.83	95.00	72.73	92.41	96.00	98.51
Missouri	94.92	95.00	90.38	97.14	93.83	96.25	93.75	95.45	94.32	96.77	94.44
Montana	93.68	100.00	92.86	92.99	93.00	94.38	100.00	91.57	94.94	100.00	92.86
Nebraska	85.28	79.71	91.38	86.11	82.05	88.61	83.33	93.75	84.62	50.00	88.89
Nevada	88.62	82.76	92.31	94.23	87.65	91.89	80.00	87.50	88.89	86.67	91.18
New Hampshire	96.69	95.00	90.91	97.78	97.53	94.87	100.00	100.00	98.44	95.83	90.91
New Jersey	86.98	90.63	84.62	90.70	87.34	90.00	78.79	81.82	86.30	88.57	88.71
New Mexico	92.49	81.08	89.74	97.94	92.16	95.52	50.00	94.74	93.44	86.67	95.83
New York	85.67	81.82	84.15	90.16	89.16	89.21	77.17	77.78	90.57	86.42	81.36
North Carolina	88.73	78.00	100.00	90.77	88.54	89.29	87.50	81.82	90.16	91.07	86.84
North Dakota	95.95	100.00	92.31	95.59	95.51	96.39	100.00	96.15	94.12	100.00	100.00
Ohio	93.12	90.91	94.64	93.59	92.31	95.00	90.32	87.50	93.98	90.38	95.65
Oklahoma	93.87	85.00	95.74	94.98	94.54	93.01	--	97.22	94.54	89.74	87.50
Oregon	91.91	85.71	93.06	93.94	92.68	90.24	100.00	95.65	94.20	86.84	90.70
Pennsylvania	89.42	88.89	90.32	89.01	85.90	91.25	93.55	88.89	91.67	91.30	85.71
Rhode Island	88.89	96.15	80.77	100.00	89.47	85.71	100.00	66.67	89.58	96.00	85.00
South Carolina	87.04	87.50	78.13	89.62	86.25	88.61	66.67	80.00	85.45	88.37	88.14
South Dakota	95.93	100.00	100.00	95.42	94.25	97.59	100.00	96.00	95.31	95.00	100.00
Tennessee	95.72	92.16	100.00	95.83	93.67	96.25	100.00	100.00	93.94	100.00	94.29
Texas	93.60	93.15	92.45	94.20	93.43	95.87	91.89	91.67	95.14	92.94	93.16
Utah	98.86	96.97	98.72	100.00	97.56	100.00	100.00	100.00	97.37	100.00	98.82
Vermont	92.38	100.00	--	92.08	92.21	91.30	100.00	94.12	95.71	90.00	62.50
Virginia	87.78	84.62	79.59	94.94	88.31	88.75	82.61	92.86	89.29	91.11	83.08
Washington	94.34	92.98	91.94	96.77	96.63	90.36	97.50	100.00	98.70	91.07	90.16
West Virginia	91.67	90.91	100.00	90.55	93.24	92.21	82.35	94.74	89.13	96.88	92.00
Wisconsin	93.18	92.31	82.76	96.30	93.02	95.06	77.78	93.33	95.40	89.47	91.67
Wyoming	96.32	100.00	100.00	95.45	95.18	98.11	--	90.00	100.00	95.45	100.00
Midwest	93.44	89.02	91.65	95.70	92.83	94.47	91.67	96.45	93.60	92.04	91.25
Northeast	90.26	88.12	87.91	92.85	90.90	91.57	82.97	87.74	93.45	90.32	85.92
South	91.97	89.01	90.15	93.92	91.62	92.20	92.34	91.87	92.05	93.27	90.93
West	91.77	89.53	91.26	93.22	91.27	92.51	91.18	91.50	93.92	89.79	90.90

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

Table A.8 - Public School Questionnaire: Percent of Responding Public Schools, by State and School Characteristics (Weight: Basic school weight).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	92.27	89.86	91.06	94.14	92.06	93.14	90.22	95.20	92.90	91.69	89.36
Alabama	95.05	94.00	91.10	97.23	93.96	96.62	97.96	100.00	95.12	94.95	93.88
Alaska	87.74	88.81	60.04	88.37	79.05	94.25	93.05	91.61	85.26	74.28	94.62
Arizona	91.86	88.73	93.62	95.22	91.94	93.57	72.36	86.38	94.82	92.46	88.77
Arkansas	94.17	100.00	74.03	95.32	94.79	93.12	100.00	86.34	93.00	100.00	100.00
California	88.25	88.11	89.10	86.89	88.38	89.06	83.06	93.39	87.43	90.56	83.94
Colorado	92.22	94.93	89.53	93.16	90.60	95.48	100.00	95.31	94.17	87.21	89.09
Connecticut	93.12	90.29	94.65	93.97	93.28	92.15	100.00	100.00	95.94	91.30	80.12
Delaware	88.24	87.46	89.79	87.02	86.70	94.17	85.30	85.30	82.63	91.90	88.97
District of Columbia	85.51	85.51	--	--	85.29	87.05	81.93	100.00	91.26	71.06	88.09
Florida	94.47	92.95	97.82	93.74	95.28	91.79	94.66	92.66	94.99	92.13	95.97
Georgia	93.91	93.95	96.21	92.60	93.80	94.91	90.00	100.00	89.41	99.22	92.47
Hawaii	92.11	92.85	91.29	93.49	93.69	83.56	100.00	100.00	96.43	88.95	90.02
Idaho	91.71	100.00	85.94	92.34	91.07	92.13	100.00	86.05	94.06	89.32	100.00
Illinois	94.34	92.65	91.61	97.99	94.82	92.22	98.91	100.00	94.09	94.64	88.54
Indiana	93.74	87.68	89.74	98.16	93.14	97.80	66.68	53.91	94.92	91.26	97.22
Iowa	96.12	84.44	94.58	98.89	96.12	95.95	100.00	100.00	94.71	100.00	87.49
Kansas	92.79	83.55	78.04	95.89	91.16	96.69	100.00	100.00	87.12	94.35	85.05
Kentucky	92.05	86.97	92.73	93.00	91.04	94.43	100.00	100.00	92.71	89.68	91.71
Louisiana	90.11	80.98	98.72	92.63	87.98	93.41	96.39	95.14	86.90	94.00	91.63
Maine	91.92	87.12	100.00	91.82	90.34	96.61	92.96	86.67	95.56	83.96	100.00
Maryland	84.76	75.79	81.47	99.24	86.71	78.07	59.25	49.02	84.25	92.78	77.01
Massachusetts	94.17	95.07	93.90	93.83	94.33	93.33	100.00	100.00	97.24	84.90	93.37
Michigan	96.46	98.18	99.13	94.05	97.31	94.47	91.35	98.65	95.57	98.55	94.02
Minnesota	94.84	76.45	92.73	97.32	94.65	95.05	100.00	100.00	97.64	93.35	80.02
Mississippi	93.83	88.59	100.00	93.40	94.85	92.27	92.70	69.79	94.11	95.94	97.61
Missouri	95.28	91.60	92.00	97.10	94.45	97.33	94.06	99.35	93.53	98.25	94.97
Montana	92.37	100.00	91.49	91.87	91.31	93.82	100.00	90.55	94.59	100.00	94.17
Nebraska	89.01	81.55	94.05	91.49	88.90	89.09	93.66	97.23	83.68	45.52	89.75
Nevada	88.31	82.41	92.61	93.37	87.67	91.04	79.58	88.54	88.55	86.25	91.53
New Hampshire	97.57	97.30	91.96	98.20	97.96	96.06	100.00	100.00	98.26	95.69	91.48
New Jersey	87.09	89.12	86.00	89.16	86.28	91.62	80.27	85.29	85.12	90.87	90.95
New Mexico	93.28	82.73	89.10	97.63	93.14	95.76	46.16	98.42	94.19	85.57	95.71
New York	89.31	88.75	85.99	92.98	89.76	90.26	79.94	83.15	93.51	88.32	83.50
North Carolina	89.84	79.07	100.00	92.55	89.64	90.33	91.15	77.87	91.53	91.01	86.35
North Dakota	95.67	100.00	90.05	95.53	96.59	94.12	100.00	95.28	95.30	100.00	100.00
Ohio	92.79	90.52	95.39	92.30	92.44	93.73	92.69	93.06	93.42	88.22	99.19
Oklahoma	94.51	87.01	97.41	95.67	94.78	94.03	--	98.30	94.68	89.58	88.03
Oregon	93.03	85.74	95.06	94.54	93.85	89.61	100.00	97.23	94.83	84.53	91.60
Pennsylvania	88.53	80.59	88.54	91.00	86.83	93.02	88.95	94.14	88.73	89.97	84.65
Rhode Island	89.83	94.82	83.11	100.00	89.29	89.54	100.00	73.84	91.66	96.23	86.31
South Carolina	87.29	92.01	69.74	90.85	86.79	89.01	72.00	96.18	85.64	89.82	85.93
South Dakota	95.93	100.00	100.00	95.62	94.59	97.51	100.00	96.43	94.84	95.04	100.00
Tennessee	94.53	89.52	100.00	94.35	93.68	96.09	100.00	100.00	92.24	100.00	92.71
Texas	94.16	94.62	89.79	95.01	94.20	94.37	92.69	91.04	98.41	92.57	90.51
Utah	98.39	94.89	98.42	100.00	97.57	100.00	100.00	100.00	96.61	100.00	98.08
Vermont	93.26	100.00	--	93.03	93.00	93.20	100.00	93.83	95.51	90.69	64.21
Virginia	89.31	88.25	84.58	92.38	88.79	91.26	85.17	97.86	90.12	90.47	83.87
Washington	95.77	94.92	93.95	97.37	96.75	93.06	97.88	100.00	97.93	92.92	91.47
West Virginia	92.75	95.41	100.00	91.19	93.62	92.55	82.07	97.52	90.46	95.19	95.09
Wisconsin	93.86	89.32	90.02	96.19	93.33	95.73	80.03	98.92	94.43	89.11	94.70
Wyoming	94.71	100.00	100.00	93.84	93.59	97.24	--	89.87	100.00	94.43	100.00
Midwest	94.21	89.98	93.36	96.03	94.05	94.77	92.03	98.15	93.71	92.73	92.64
Northeast	90.17	88.85	88.41	92.53	89.81	92.22	84.25	91.55	92.09	89.08	85.91
South	92.45	90.46	91.44	93.87	92.28	92.81	92.92	93.43	92.65	93.25	90.82
West	91.02	89.44	90.73	92.35	90.87	91.92	88.36	93.39	92.59	90.37	87.26

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Questionnaires).

Table A.9 - Private School Questionnaire: Percent of Responding Private Schools, by Type and School Characteristics (Weight: Unweighted).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	84.09	83.65	83.05	86.91	86.32	88.63	78.30	83.69	84.94	81.68	83.33
Area Frame	75.21	82.22	72.00	69.23	84.91	62.50	68.33	73.03	82.76	50.00	100.00
Association of Military Colleges and Schools of the U.S.	96.30	100.00	80.00	100.00	100.00	100.00	88.89	100.00	95.24	100.00	100.00
National Catholic Education Association, Jesuit Secondary	89.16	87.65	90.00	91.19	88.87	90.31	85.71	91.35	88.38	87.60	93.62
Friends Council on Education	80.00	86.36	74.29	83.33	87.88	71.43	74.29	85.00	88.89	54.55	66.67
National Association of Episcopal Schools	81.19	75.00	84.21	93.33	78.57	100.00	75.00	80.00	82.26	85.71	75.00
National Society of Hebrew Day Schools	80.73	82.86	78.95	0.00	80.33	82.35	78.57	78.26	85.07	73.33	50.00
Solomon Schechter Day Schools	88.00	95.00	81.48	100.00	93.18	100.00	25.00	85.71	93.10	80.00	50.00
Other Jewish	76.67	78.72	74.42	--	81.40	75.00	70.97	78.79	75.68	90.00	60.00
Lutheran Church - Missouri Synod	91.30	93.10	92.11	88.00	90.79	90.00	100.00	85.29	94.44	100.00	--
Evangelical Lutheran Church - Wisconsin	91.49	92.31	85.19	95.12	92.31	84.62	100.00	89.55	96.15	--	100.00
Evangelical Lutheran Church in America	93.75	90.24	95.00	100.00	93.02	100.00	100.00	97.56	90.38	100.00	--
Other Lutheran	88.14	81.25	88.00	94.44	84.78	100.00	100.00	95.74	70.00	0.00	--
General Conference of Seventh-Day Adventists	88.17	77.78	95.83	90.48	83.78	100.00	84.85	86.67	90.91	--	--
Christian Schools International	75.63	71.43	76.60	78.38	78.95	93.75	69.23	71.43	78.85	80.00	75.00
American Association of Christian Schools	69.52	72.22	60.00	76.47	77.14	60.00	66.15	71.19	64.86	75.00	100.00
National Association of Private Schools for Exceptional Children	88.39	88.89	85.51	93.75	75.00	100.00	88.36	91.34	77.78	0.00	--
American Montessori Society, other Montessori	84.34	86.49	82.05	85.71	82.61	--	92.86	80.00	95.65	--	--
National Association of Independent Schools	81.15	78.51	81.82	87.50	77.27	80.77	82.32	92.00	80.28	78.85	80.49
National Independent Private Schools Association	83.15	90.00	73.68	90.91	79.07	100.00	85.00	89.19	79.55	66.67	100.00
All Else	76.70	76.55	75.68	78.13	81.90	86.21	72.94	77.30	76.26	85.71	64.29
Catholic - Parochial	87.74	85.13	89.29	90.20	88.59	83.67	76.92	90.91	87.83	85.71	80.00
Catholic - Diocesan	90.69	89.55	90.83	93.62	89.17	92.62	90.91	95.45	87.89	93.33	100.00
Catholic - Private	88.55	89.02	88.89	83.33	93.33	89.76	79.17	72.22	91.55	82.86	95.24
Other Religious - Conservative Christian	76.31	79.17	69.03	81.52	75.23	85.00	76.02	78.98	75.21	65.00	62.50
Other Religious - Affiliated	81.07	79.61	82.08	82.50	86.34	89.57	66.34	82.24	82.63	75.47	66.67
Other Religious - Unaffiliated	85.23	86.82	81.30	87.31	89.64	82.61	77.97	81.61	90.37	93.33	84.62
Non-sectarian - Regular	81.15	81.01	79.58	84.85	81.67	85.25	79.46	85.90	81.15	77.97	76.32
Non-sectarian - Special emphasis	82.42	81.40	77.61	96.55	81.32	90.91	82.50	81.20	84.21	66.67	100.00
Non-sectarian - Special education	90.86	91.53	89.47	93.75	100.00	100.00	90.66	91.72	85.71	100.00	--
Catholic	88.82	87.35	89.68	90.68	88.87	89.93	81.25	88.68	88.29	87.70	93.68
Other religious	81.11	81.18	79.03	84.10	85.67	87.29	72.64	81.16	82.87	76.14	70.00
Non-sectarian	83.92	83.17	82.24	89.76	81.60	86.67	84.56	86.93	82.25	77.78	79.07
Midwest	89.63	87.01	88.69	93.44	90.32	91.41	86.11	90.35	90.00	83.61	89.13
Northeast	81.92	81.05	81.49	85.03	84.50	84.74	76.36	77.33	84.40	79.57	85.96
South	85.28	85.54	85.34	84.52	89.17	94.64	79.65	84.21	85.97	89.47	81.25
West	77.02	80.90	73.53	72.60	78.93	84.27	69.23	79.82	76.11	69.77	74.19

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Questionnaires)

Table A.10 - Private School Questionnaire: Percent of Responding Private Schools, by Type and School Characteristics (Weight: Basic school weight).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	83.19	82.52	83.56	83.68	86.96	86.96	74.71	80.63	85.70	84.47	83.12
Area Frame	71.35	83.57	70.60	63.66	88.72	33.87	63.72	68.72	86.11	41.81	100.00
Association of Military Colleges and Schools of the U.S.	96.30	100.00	80.00	100.00	100.00	100.00	88.89	100.00	95.24	100.00	100.00
National Catholic Education Association, Jesuit Secondary	89.21	87.30	90.70	90.54	89.19	90.16	86.19	91.59	88.50	88.19	94.74
Friends Council on Education	80.00	86.36	74.29	83.33	87.88	71.43	74.29	85.00	88.89	54.55	66.67
National Association of Episcopal Schools	77.88	73.37	86.98	72.00	81.33	100.00	63.31	72.87	80.38	85.98	73.91
National Society of Hebrew Day Schools	78.68	83.26	70.37	0.00	78.72	80.84	75.17	79.37	82.09	71.54	45.08
Solomon Schechter Day Schools	88.00	95.00	81.48	100.00	93.18	100.00	25.00	85.71	93.10	80.00	50.00
Other Jewish	71.77	73.82	69.13	--	82.50	65.94	60.15	69.91	71.12	96.86	54.09
Lutheran Church - Missouri Synod	90.52	94.62	91.99	85.01	89.81	98.14	100.00	83.17	96.78	100.00	--
Evangelical Lutheran Church - Wisconsin	89.63	90.43	81.23	94.58	89.74	85.43	100.00	87.89	97.56	--	100.00
Evangelical Lutheran Church in America	94.59	91.18	95.76	100.00	93.92	100.00	100.00	97.85	91.06	100.00	--
Other Lutheran	88.14	81.25	88.00	94.44	84.78	100.00	100.00	95.74	70.00	0.00	--
General Conference of Seventh-Day Adventists	89.12	82.35	95.55	89.55	89.77	100.00	84.55	88.72	91.10	--	--
Christian Schools International	69.17	51.94	72.02	83.28	67.62	81.57	69.31	63.84	80.31	85.59	67.40
American Association of Christian Schools	72.76	74.20	65.55	77.62	85.79	67.28	70.18	71.76	74.90	70.82	100.00
National Association of Private Schools for Exceptional Children	88.47	89.32	84.97	93.97	71.65	100.00	88.95	90.72	77.21	0.00	--
American Montessori Society, other Montessori	83.34	86.80	76.06	95.30	80.17	--	92.24	80.35	97.26	--	--
National Association of Independent Schools	82.43	81.29	80.96	89.19	82.54	80.72	83.03	90.84	82.57	74.88	79.29
National Independent Private Schools Association	80.15	85.47	72.09	90.91	73.54	100.00	85.57	86.85	74.93	67.88	100.00
All Else	79.11	78.14	80.20	79.15	85.50	89.38	73.94	80.10	77.14	83.12	63.18
Catholic - Parochial	87.99	85.57	90.19	89.17	88.48	83.08	73.65	89.23	87.79	86.55	88.86
Catholic - Diocesan	90.89	88.71	91.10	95.00	90.73	91.68	89.52	97.39	89.12	91.90	100.00
Catholic - Private	87.85	88.92	89.82	76.45	93.33	90.11	73.05	74.12	91.57	85.70	95.17
Other Religious - Conservative Christian	76.54	80.13	69.67	79.19	79.36	88.60	74.37	77.45	76.48	68.53	48.95
Other Religious - Affiliated	76.53	73.29	79.38	77.85	84.02	86.61	57.42	75.07	79.02	81.40	64.17
Other Religious - Unaffiliated	79.54	81.06	79.93	78.45	86.73	69.50	69.11	76.01	89.20	97.96	83.25
Non-sectarian - Regular	86.44	84.02	88.11	87.15	93.52	85.23	77.16	91.87	83.45	80.59	73.22
Non-sectarian - Special emphasis	81.36	79.55	73.82	98.90	78.46	89.50	83.39	79.08	90.92	35.26	100.00
Non-sectarian - Special education	93.25	91.31	93.62	96.81	100.00	100.00	93.21	93.13	93.18	100.00	--
Catholic	88.80	86.81	90.42	90.11	89.21	89.45	77.28	89.39	88.43	88.13	94.77
Other religious	77.49	77.88	75.83	78.53	83.80	81.79	69.29	76.27	80.58	78.95	64.40
Non-sectarian	86.07	83.41	85.78	92.45	87.96	86.09	84.70	87.12	85.86	78.92	75.19
Midwest	89.01	88.77	86.92	91.03	89.25	91.98	87.20	88.51	90.05	83.33	88.88
Northeast	81.96	79.29	83.21	83.80	88.38	83.14	66.67	77.48	84.67	87.31	87.36
South	82.09	82.19	84.80	79.22	87.41	89.00	75.62	78.93	84.91	88.92	83.07
West	77.62	80.05	78.05	71.13	81.07	84.35	67.78	75.47	81.21	73.21	67.27

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Questionnaires)

Table A.11 - Public School Teacher Questionnaire: Percent of Responding Public School Teachers, by State and School Characteristics (Weight: Unweighted

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	88.87	86.04	88.02	90.67	88.76	89.14	87.88	89.78	89.90	88.43	88.01
Alabama	89.60	90.31	89.09	89.65	89.94	89.85	88.92	100.00	87.97	90.16	89.68
Alaska	84.54	83.33	82.22	84.98	89.57	82.49	82.00	81.59	87.10	83.33	85.06
Arizona	89.57	88.04	90.58	90.99	88.81	90.34	87.76	82.00	88.73	89.06	90.74
Arkansas	90.37	92.75	84.44	90.48	92.64	89.22	92.00	80.56	89.46	92.86	92.67
California	82.39	80.06	83.04	86.15	80.97	83.14	82.83	86.92	81.43	81.67	82.21
Colorado	88.84	90.04	85.29	92.46	87.43	88.89	94.74	93.59	90.97	86.80	87.14
Connecticut	87.26	84.25	86.67	90.09	89.08	86.44	82.35	91.67	90.03	85.78	85.20
Delaware	86.73	81.25	84.89	89.86	88.34	82.76	93.33	93.33	92.50	87.37	83.33
District of Columbia	70.86	70.86	--	--	70.89	70.19	75.00	50.00	73.33	70.11	66.67
Florida	89.93	89.13	89.45	92.86	93.07	88.41	88.92	89.86	92.46	89.55	89.41
Georgia	91.45	90.00	90.48	92.46	92.18	91.33	89.80	75.00	93.07	94.03	90.45
Hawaii	86.40	91.00	85.57	80.00	88.87	80.66	88.00	91.67	87.94	90.60	84.18
Idaho	92.88	87.88	96.27	92.37	92.31	92.87	97.44	93.81	92.11	95.37	91.69
Illinois	87.62	84.07	87.05	91.80	86.22	88.42	88.51	88.79	89.40	85.59	86.08
Indiana	91.05	89.74	89.10	92.95	91.78	91.10	88.42	83.33	95.26	88.47	90.40
Iowa	92.92	93.59	87.96	93.52	91.17	93.25	100.00	91.87	93.27	92.00	93.41
Kansas	90.94	91.00	85.09	92.16	90.49	91.41	50.00	93.81	92.15	86.21	90.69
Kentucky	89.79	90.21	92.72	88.80	90.65	89.66	84.00	87.23	88.32	90.09	90.94
Louisiana	89.81	88.60	88.54	90.73	91.82	89.13	89.14	91.49	90.77	90.35	88.41
Maine	90.41	90.74	89.61	90.45	90.98	89.75	93.02	93.83	91.93	87.50	87.25
Maryland	88.49	88.07	90.00	85.34	87.74	88.66	92.86	81.82	89.68	85.90	89.22
Massachusetts	87.86	84.49	88.13	90.00	87.14	88.27	83.33	86.67	88.05	89.66	86.74
Michigan	90.23	84.12	91.69	91.29	86.20	93.39	89.60	87.36	91.88	87.55	91.24
Minnesota	93.14	92.50	91.10	94.16	91.23	93.86	96.00	96.25	94.77	91.42	92.40
Mississippi	89.98	86.36	92.20	89.91	91.86	88.46	91.71	88.37	90.91	88.32	90.49
Missouri	90.51	86.36	87.93	93.08	93.23	89.39	88.37	87.95	92.13	86.47	91.25
Montana	92.25	93.13	90.29	92.30	90.18	93.40	100.00	91.46	92.41	91.54	94.71
Nebraska	92.77	91.01	93.87	94.29	91.11	93.26	100.00	95.47	92.35	84.62	92.54
Nevada	85.01	82.01	87.50	87.74	83.57	86.67	88.24	76.19	88.50	82.91	86.21
New Hampshire	89.52	83.61	91.49	91.04	90.79	88.28	80.00	97.06	88.56	90.43	88.89
New Jersey	84.77	76.19	87.09	84.85	86.36	85.11	79.55	80.00	85.07	88.35	83.63
New Mexico	89.34	89.37	87.50	90.18	90.05	88.91	83.33	84.21	88.84	88.83	90.74
New York	79.73	70.27	82.34	88.58	80.80	78.73	81.22	73.08	84.42	85.92	74.67
North Carolina	89.90	88.79	88.62	90.51	90.03	90.68	84.78	83.78	89.04	92.00	89.70
North Dakota	93.38	92.93	90.63	93.79	92.12	94.07	100.00	95.73	91.74	88.79	94.94
Ohio	89.59	86.29	90.65	91.28	87.50	91.58	86.13	88.89	90.64	85.46	91.95
Oklahoma	87.57	90.48	87.76	87.07	84.83	89.38	--	88.65	86.38	89.66	88.24
Oregon	89.47	85.39	88.24	93.28	90.49	88.44	95.65	97.50	90.72	88.21	87.37
Pennsylvania	88.49	88.14	84.84	91.13	87.37	89.76	86.39	90.48	88.70	86.44	89.83
Rhode Island	84.56	78.22	84.38	91.67	85.51	82.54	83.33	85.00	86.93	80.56	84.62
South Carolina	89.76	91.60	84.77	90.78	91.45	89.49	70.59	73.68	91.88	90.40	89.10
South Dakota	89.90	94.29	89.09	89.45	88.02	90.81	80.00	88.89	89.85	88.16	94.70
Tennessee	89.79	85.44	94.34	90.12	88.49	90.06	91.36	80.95	92.47	93.78	86.64
Texas	89.87	88.57	88.99	91.51	88.98	90.78	89.72	88.21	90.37	89.69	89.99
Utah	92.43	91.00	92.39	93.35	90.45	93.25	94.34	92.86	90.24	90.00	93.57
Vermont	86.50	86.36	--	86.51	85.90	86.75	90.91	84.21	87.23	89.55	79.55
Virginia	89.70	90.42	84.91	92.33	89.86	88.35	95.88	90.91	91.51	91.71	87.59
Washington	87.80	85.09	86.97	90.41	89.54	87.15	86.63	83.67	88.35	88.89	87.18
West Virginia	91.79	95.42	84.09	92.61	92.73	90.76	95.95	92.86	91.45	89.73	94.22
Wisconsin	91.72	86.89	93.18	93.27	93.15	91.43	85.42	92.45	93.93	91.88	88.92
Wyoming	90.56	84.04	88.46	91.88	93.50	88.18	--	92.31	92.68	87.01	88.55
Midwest	91.06	88.83	89.72	92.45	90.09	91.84	89.36	92.13	92.18	88.13	90.97
Northeast	85.90	79.07	86.08	89.41	86.92	85.74	83.06	87.01	87.96	87.17	83.09
South	89.38	88.11	88.92	90.15	89.26	89.36	89.72	87.98	89.33	89.98	89.31
West	88.11	85.48	87.24	90.29	88.25	88.39	85.74	88.78	89.39	87.38	87.40

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Teacher Questionnaires).

Table A.12 - Public School Teacher Questionnaire: Percent of Responding Public School Teachers, by State and School Characteristics (Weight: Basic teacher weight).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	88.22	85.10	87.31	90.97	88.18	88.39	87.29	91.10	89.23	87.66	87.37
Alabama	89.59	91.45	88.76	89.33	89.85	89.79	88.10	100.00	88.59	90.00	89.56
Alaska	85.77	83.33	82.97	87.02	89.31	82.72	80.27	81.90	88.43	84.18	85.46
Arizona	89.94	87.52	90.40	94.44	89.81	90.37	82.24	75.03	88.16	90.92	90.87
Arkansas	91.06	93.23	85.98	91.13	92.60	89.04	92.00	81.55	90.69	93.22	92.11
California	81.92	78.32	82.34	88.40	81.19	83.26	81.62	89.68	82.29	79.97	82.54
Colorado	87.99	88.33	84.06	92.83	87.35	88.95	94.44	96.99	89.62	85.25	86.92
Connecticut	88.17	83.16	90.76	90.46	89.25	86.34	82.64	83.50	90.48	86.63	85.55
Delaware	85.86	79.11	84.35	88.94	87.84	81.92	87.49	87.49	92.15	86.62	83.13
District of Columbia	70.91	70.91	--	--	70.98	70.39	74.91	50.00	72.69	71.29	66.73
Florida	91.06	89.82	91.51	94.16	92.43	88.14	88.64	91.05	93.93	89.80	91.04
Georgia	91.73	91.10	88.01	94.26	91.94	91.36	90.01	75.00	93.42	93.77	89.71
Hawaii	85.71	90.22	85.16	80.00	88.43	80.05	87.52	92.64	88.35	90.84	82.90
Idaho	92.69	90.54	95.81	91.84	92.42	92.89	97.48	94.53	91.33	95.38	91.40
Illinois	86.46	81.91	86.35	90.79	85.48	88.11	88.35	91.71	87.81	84.89	84.37
Indiana	91.26	86.41	89.88	94.22	91.59	90.92	89.02	92.31	95.25	86.63	91.43
Iowa	91.98	93.60	84.56	92.72	91.06	93.10	100.00	90.34	91.71	93.04	93.38
Kansas	90.67	90.93	83.19	92.25	90.30	91.37	50.00	93.83	90.94	87.22	90.76
Kentucky	90.41	94.76	93.64	88.44	90.85	89.62	84.52	89.76	89.78	89.12	93.04
Louisiana	90.63	89.66	89.79	91.56	91.64	88.88	88.66	92.99	91.85	93.50	87.57
Maine	90.18	90.02	86.38	90.55	90.25	89.81	93.74	93.36	90.80	88.15	87.86
Maryland	87.75	85.05	90.14	83.93	87.31	88.69	92.70	81.82	87.10	86.22	89.54
Massachusetts	87.29	84.49	86.13	91.52	86.93	88.01	82.44	94.39	87.40	89.25	84.72
Michigan	89.20	83.90	89.70	91.23	87.46	92.83	88.30	83.34	91.60	85.61	90.30
Minnesota	93.00	96.16	90.08	94.02	92.34	93.74	95.76	95.92	95.78	91.12	91.51
Mississippi	90.54	84.86	93.14	90.77	91.75	88.17	91.72	88.92	91.61	89.08	90.86
Missouri	91.69	86.59	89.65	94.15	93.28	89.27	89.61	95.31	93.04	88.14	91.34
Montana	91.61	93.37	89.23	91.57	90.32	93.20	100.00	90.06	91.99	91.48	94.45
Nebraska	92.18	89.43	94.11	93.77	90.91	93.62	100.00	94.48	91.65	86.00	92.88
Nevada	84.01	81.26	89.85	85.78	82.42	87.40	88.21	75.86	87.46	81.32	86.25
New Hampshire	89.79	84.16	91.50	91.15	90.56	88.50	80.00	96.34	88.76	90.83	89.04
New Jersey	85.68	81.60	86.91	84.89	85.96	85.48	80.29	77.43	86.72	89.91	81.63
New Mexico	90.20	90.53	87.84	91.21	91.29	88.31	83.33	87.22	90.63	88.43	91.69
New York	79.91	70.91	83.43	85.96	81.14	77.87	80.76	69.81	83.96	83.07	74.84
North Carolina	90.28	88.98	85.54	92.03	89.77	91.63	84.49	86.78	88.31	90.07	92.28
North Dakota	93.26	93.36	89.71	93.65	92.44	94.14	100.00	96.60	90.80	88.67	95.18
Ohio	88.66	80.98	89.78	92.73	87.12	91.16	85.91	96.49	89.71	84.01	91.93
Oklahoma	87.20	92.25	85.22	86.41	86.03	88.94	--	87.49	86.81	90.06	84.83
Oregon	89.96	83.40	90.22	94.22	90.65	88.43	95.94	98.84	90.14	89.65	86.96
Pennsylvania	88.15	86.06	84.86	91.58	87.08	90.08	85.86	92.73	86.97	86.20	90.86
Rhode Island	84.51	78.46	84.44	91.49	85.58	82.54	79.63	85.22	87.28	80.13	84.32
South Carolina	90.62	92.67	88.56	90.81	91.30	89.41	70.58	93.08	90.85	91.58	89.69
South Dakota	89.35	94.48	87.12	88.88	88.17	90.67	81.39	89.23	88.16	87.78	95.35
Tennessee	89.09	85.52	94.00	88.59	88.52	89.94	91.45	86.38	93.29	93.79	82.37
Texas	89.58	89.11	90.13	89.88	88.99	90.75	89.82	91.35	86.03	90.34	91.17
Utah	91.49	89.71	90.24	94.33	90.15	93.13	94.20	90.91	87.87	89.88	93.35
Vermont	86.22	86.24	--	86.22	85.58	86.70	90.91	83.50	87.13	89.72	78.72
Virginia	89.86	89.99	84.06	93.51	90.49	88.29	95.87	89.77	90.89	90.94	88.21
Washington	88.06	86.11	87.50	90.33	88.79	86.98	86.57	84.50	87.67	89.61	87.21
West Virginia	91.98	97.33	86.16	91.90	92.85	90.54	95.72	90.00	91.39	91.45	95.01
Wisconsin	92.50	88.14	95.21	93.46	93.11	91.65	85.49	96.57	93.36	92.36	90.22
Wyoming	91.02	84.21	88.01	92.47	93.47	87.80	--	92.76	92.54	87.94	88.27
Midwest	90.03	85.41	89.10	92.72	89.36	91.15	89.06	93.16	91.34	87.06	89.88
Northeast	84.88	77.78	85.52	88.87	85.30	84.39	81.99	87.82	86.82	85.92	81.84
South	89.92	89.33	89.21	90.68	90.09	89.64	89.45	89.05	89.34	90.61	89.92
West	85.94	82.67	85.01	90.75	85.64	86.52	84.84	90.03	87.41	84.59	85.45

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Teacher Questionnaires).

Table A.13 - Private School Teacher Questionnaire: Percent of Responding Private School Teachers, by Type and School Characteristics (Weight: Unweighted).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	80.61	78.58	80.85	84.67	80.39	83.57	78.27	78.66	81.02	82.77	81.30
Area Frame	71.76	74.45	73.15	61.11	82.14	60.00	56.88	72.45	72.09	50.00	80.00
Association of Military Colleges and Schools of the U.S.	87.37	78.26	100.00	87.93	78.57	85.71	96.00	50.00	88.57	93.33	75.00
National Catholic Education Association, Jesuit Secondary	83.50	82.11	83.69	87.03	82.76	84.74	83.65	90.72	82.80	85.20	80.53
Friends Council on Education	83.86	77.53	87.65	88.68	79.82	92.31	86.36	85.71	75.71	92.50	86.36
National Association of Episcopal Schools	83.64	79.87	88.00	84.00	76.88	90.00	90.48	74.51	82.63	90.00	97.50
National Society of Hebrew Day Schools	63.30	63.37	66.67	0.00	65.43	59.04	63.64	56.25	69.51	50.00	55.56
Solomon Schechter Day Schools	78.79	76.56	79.57	87.50	78.23	85.71	75.00	76.00	77.36	88.00	77.78
Other Jewish	66.51	62.22	69.60	--	68.32	70.00	60.94	72.22	75.76	30.77	44.44
Lutheran Church - Missouri Synod	90.14	90.00	89.57	91.46	90.64	86.67	90.48	84.55	91.98	100.00	--
Evangelical Lutheran Church - Wisconsin	90.96	88.35	91.59	92.17	91.00	92.65	75.00	89.79	92.42	--	100.00
Evangelical Lutheran Church in America	87.64	82.78	90.00	95.74	87.46	88.89	91.67	87.70	86.21	100.00	--
Other Lutheran	85.79	80.95	90.48	84.00	85.06	90.91	87.50	87.77	78.43	100.00	--
General Conference of Seventh-Day Adventists	89.32	83.10	89.77	92.62	84.76	96.97	85.71	89.86	88.81	--	--
Christian Schools International	78.01	63.64	83.33	82.61	78.83	79.52	76.54	67.48	81.22	94.12	82.14
American Association of Christian Schools	62.58	72.50	53.85	59.30	66.92	44.00	61.84	59.29	64.89	61.76	100.00
National Association of Private Schools for Exceptional Children	82.90	79.70	82.68	89.19	94.44	85.71	82.13	82.98	83.84	60.00	--
American Montessori Society, other Montessori	69.72	68.63	68.99	87.50	67.02	--	86.67	68.37	72.32	--	--
National Association of Independent Schools	82.65	83.21	79.88	87.88	75.80	87.30	82.53	81.63	82.26	85.64	80.25
National Independent Private Schools Association	72.80	71.68	74.07	72.41	70.21	82.61	74.42	76.67	69.87	78.57	83.33
All Else	75.33	74.34	73.94	79.25	72.77	79.02	76.16	70.68	75.98	84.29	89.06
Catholic - Parochial	83.00	81.82	81.32	88.38	83.03	81.08	91.43	94.03	81.89	83.33	74.77
Catholic - Diocesan	82.89	82.90	83.08	82.28	82.17	83.99	77.78	83.05	83.12	84.09	80.61
Catholic - Private	84.13	80.49	87.14	94.59	78.57	85.04	81.82	82.50	83.33	87.27	83.12
Other Religious - Conservative Christian	71.80	73.46	70.55	70.85	73.79	83.53	67.85	68.09	74.38	73.61	84.38
Other Religious - Affiliated	79.95	75.68	81.93	85.49	80.49	80.49	77.94	78.95	80.91	77.78	78.76
Other Religious - Unaffiliated	83.01	78.68	81.90	89.33	84.81	80.10	80.00	81.79	83.39	79.63	93.55
Non-sectarian - Regular	81.00	78.55	81.45	85.77	74.31	89.61	81.91	78.77	79.33	86.82	81.46
Non-sectarian - Special emphasis	74.91	74.23	74.09	80.28	70.75	82.61	81.36	72.55	77.56	100.00	70.59
Non-sectarian - Special education	80.73	80.92	79.34	85.29	100.00	66.67	80.75	81.23	83.16	0.00	--
Catholic	83.18	81.90	83.13	87.08	82.69	84.03	83.02	90.33	82.46	84.73	80.52
Other religious	79.09	75.96	79.81	83.32	80.77	80.73	74.56	77.10	80.36	77.18	84.06
Non-sectarian	79.41	77.59	79.16	84.68	72.91	88.02	81.41	77.53	79.25	85.45	80.36
Midwest	85.54	83.98	85.51	87.38	86.06	86.84	81.17	84.05	85.59	89.55	86.67
Northeast	78.23	75.82	78.16	83.60	76.12	80.75	79.68	76.35	79.39	76.03	78.22
South	79.14	77.62	79.31	83.53	78.02	84.32	77.96	73.75	80.10	84.18	81.95
West	78.00	77.68	78.47	78.13	78.10	82.09	73.95	77.26	77.51	83.94	76.65

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private Teacher Questionnaires

Table A.14 - Private School Teacher Questionnaire: Percent of Responding Private School Teachers, by Type and School Characteristics (Weight: Basic teacher weight)

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	80.18	78.79	80.41	83.10	80.65	84.04	77.36	74.95	81.58	82.09	80.55
Area Frame	71.25	70.22	73.82	67.93	82.70	61.26	61.39	69.90	75.31	53.26	78.05
Association of Military Colleges and Schools of the U.S.	88.81	78.54	100.00	88.71	78.77	86.50	95.31	50.00	90.20	93.28	73.53
National Catholic Education Association, Jesuit Secondary	83.34	82.10	83.52	86.34	82.80	84.71	83.41	90.28	82.68	85.41	79.24
Friends Council on Education	84.21	80.99	86.87	89.73	79.19	92.93	84.85	86.55	74.95	91.92	84.02
National Association of Episcopal Schools	84.10	82.38	88.25	79.43	75.97	90.37	89.90	71.77	81.15	88.53	98.36
National Society of Hebrew Day Schools	63.12	62.75	68.03	0.00	63.64	60.29	64.18	58.98	70.04	49.97	45.63
Solomon Schechter Day Schools	78.16	74.32	79.95	86.67	78.22	83.77	71.14	73.42	77.38	86.87	75.13
Other Jewish	55.84	50.00	62.53	--	65.43	59.52	47.49	62.83	78.82	18.28	14.70
Lutheran Church - Missouri Synod	90.52	90.48	90.12	91.38	90.95	86.71	91.44	84.38	92.39	100.00	--
Evangelical Lutheran Church - Wisconsin	90.68	88.32	90.97	91.96	90.39	93.05	78.63	89.02	92.62	--	100.00
Evangelical Lutheran Church in America	88.19	83.68	90.64	94.60	87.58	85.88	98.32	88.51	86.22	100.00	--
Other Lutheran	84.47	77.33	90.97	87.14	83.16	89.94	86.10	86.67	77.28	100.00	--
General Conference of Seventh-Day Adventists	88.59	83.60	88.25	92.08	88.38	97.07	84.63	91.65	85.89	--	--
Christian Schools International	76.95	63.13	84.15	83.53	79.77	65.03	76.74	67.00	80.32	90.83	79.03
American Association of Christian Schools	64.49	68.23	56.39	68.78	71.49	53.93	63.31	58.29	72.54	50.42	100.00
National Association of Private Schools for Exceptional Children	81.37	79.97	80.19	86.66	95.90	92.48	80.62	80.88	83.89	60.00	--
American Montessori Society, other Montessori	72.19	71.78	71.12	85.04	67.25	--	84.22	70.94	74.69	--	--
National Association of Independent Schools	82.89	83.47	80.45	87.34	77.67	88.36	82.49	77.81	82.94	86.86	79.60
National Independent Private Schools Association	75.20	76.36	75.39	68.79	72.50	84.86	75.91	78.46	71.11	83.07	89.14
All Else	75.85	75.46	74.54	78.18	72.46	81.16	77.16	68.19	78.30	83.00	90.91
Catholic - Parochial	83.17	82.52	81.52	87.62	83.11	81.86	91.49	93.76	82.39	82.65	73.19
Catholic - Diocesan	82.71	82.42	83.50	81.51	82.37	84.06	75.69	82.32	82.53	84.87	81.00
Catholic - Private	84.22	79.71	87.86	95.80	80.30	85.11	83.02	81.36	84.12	89.17	81.20
Other Religious - Conservative Christian	70.10	73.18	65.91	69.82	73.52	88.53	67.50	63.41	74.02	71.68	82.06
Other Religious - Affiliated	75.37	70.59	80.88	77.11	77.81	76.85	71.62	68.55	80.39	68.52	68.89
Other Religious - Unaffiliated	80.47	78.72	74.88	87.83	81.70	79.68	79.43	72.79	83.89	73.56	93.59
Non-sectarian - Regular	82.68	80.13	83.38	87.26	76.46	90.75	83.45	73.95	82.39	88.24	83.20
Non-sectarian - Special emphasis	77.96	77.22	79.00	78.44	72.60	79.43	81.26	74.44	80.06	100.00	75.89
Non-sectarian - Special education	81.13	86.28	77.32	86.22	100.00	68.31	81.10	83.34	87.34	0.00	--
Catholic	83.20	81.97	83.29	86.37	82.83	84.20	82.72	89.85	82.61	85.05	79.23
Other religious	74.96	73.46	74.65	78.38	77.79	79.01	71.73	67.72	79.32	70.61	81.10
Non-sectarian	81.58	80.08	81.41	85.95	75.42	89.23	82.59	77.75	82.21	85.64	82.57
Midwest	85.05	84.14	85.45	85.65	85.65	87.92	80.05	81.75	85.44	89.87	85.02
Northeast	78.42	76.78	77.30	85.14	77.17	81.91	77.66	76.54	80.75	74.23	74.38
South	79.62	78.43	80.88	81.00	79.72	84.48	78.41	70.08	80.64	84.11	84.17
West	76.38	76.55	76.78	74.25	77.48	81.59	72.26	69.62	78.09	82.57	77.17

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private Teacher Questionnaires

Table A.15 - Public School Library Questionnaire: Percent of Responding Libraries, by State and School Characteristics (Weight: Unweighted).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	91.13	89.41	89.67	92.64	90.84	93.61	82.59	79.42	91.17	93.74	93.20
Alabama	96.55	100.00	96.15	95.89	100.00	95.24	93.94	100.00	91.89	100.00	97.56
Alaska	79.79	80.00	100.00	78.95	90.00	87.50	65.79	58.82	94.87	87.50	80.00
Arizona	94.90	96.00	100.00	90.63	98.08	95.35	33.33	80.00	92.86	100.00	95.24
Arkansas	97.47	100.00	100.00	96.49	97.44	97.37	100.00	80.00	100.00	95.24	100.00
California	81.36	79.10	84.15	78.57	85.94	87.23	36.84	27.78	80.00	95.12	86.36
Colorado	93.75	94.74	93.10	93.75	87.50	100.00	100.00	100.00	88.89	95.24	100.00
Connecticut	88.16	90.00	90.48	85.71	86.84	91.67	50.00	100.00	85.29	90.48	90.00
Delaware	90.91	100.00	92.59	87.10	91.30	94.44	50.00	50.00	84.62	92.00	96.15
District of Columbia	84.13	84.13	--	--	88.37	88.24	0.00	--	85.29	80.00	88.89
Florida	95.61	94.55	93.75	100.00	100.00	91.89	94.74	87.50	85.71	100.00	98.53
Georgia	93.33	93.75	93.55	93.02	97.50	90.00	90.00	100.00	90.91	96.00	92.45
Hawaii	97.10	95.24	97.14	100.00	98.11	92.31	100.00	100.00	100.00	100.00	93.55
Idaho	95.24	87.50	94.12	96.61	92.50	97.50	100.00	100.00	94.87	100.00	86.67
Illinois	87.50	93.10	80.00	93.94	89.29	94.74	66.67	68.75	89.58	95.24	88.89
Indiana	97.62	100.00	95.65	97.37	94.87	100.00	100.00	--	97.30	95.65	100.00
Iowa	96.20	94.44	100.00	96.36	97.37	94.59	100.00	100.00	95.74	100.00	85.71
Kansas	95.00	87.50	90.91	96.72	95.00	94.87	100.00	94.74	94.59	92.86	100.00
Kentucky	87.34	92.31	93.33	84.31	84.21	89.74	100.00	60.00	88.89	88.46	90.48
Louisiana	80.77	80.77	75.00	82.26	77.50	86.11	78.57	33.33	80.49	89.29	78.13
Maine	92.96	100.00	66.67	93.55	87.50	100.00	100.00	88.89	94.87	87.50	100.00
Maryland	91.57	91.67	90.74	94.12	89.74	95.00	75.00	66.67	85.00	95.45	94.74
Massachusetts	90.48	88.89	88.64	94.12	85.71	92.54	100.00	--	86.11	88.46	95.35
Michigan	90.82	81.25	90.00	94.23	90.00	95.00	83.33	50.00	90.24	87.50	100.00
Minnesota	91.46	100.00	87.50	91.23	94.87	89.74	75.00	88.89	86.21	100.00	90.48
Mississippi	91.00	100.00	93.33	89.47	93.18	89.47	88.89	100.00	89.74	88.89	93.55
Missouri	92.94	80.00	95.24	94.44	92.50	94.74	85.71	85.71	90.91	100.00	93.75
Montana	89.47	100.00	100.00	87.01	89.80	88.89	100.00	80.49	97.56	80.00	100.00
Nebraska	79.75	68.75	86.11	90.91	81.58	78.95	66.67	79.31	90.63	70.00	50.00
Nevada	89.86	85.71	88.89	96.00	90.91	90.91	66.67	75.00	86.67	88.89	95.65
New Hampshire	97.01	100.00	87.50	97.92	95.35	100.00	100.00	100.00	97.44	92.86	100.00
New Jersey	85.88	70.00	85.25	100.00	77.78	95.00	77.78	66.67	82.61	95.00	86.11
New Mexico	92.94	90.48	94.44	93.48	89.80	97.06	100.00	85.71	87.50	100.00	96.00
New York	88.89	80.43	86.96	98.08	82.50	94.20	85.71	100.00	86.05	88.89	90.32
North Carolina	90.72	78.57	72.73	100.00	91.11	95.12	72.73	50.00	84.38	92.86	100.00
North Dakota	89.41	90.91	85.71	89.55	83.72	95.24	--	83.33	97.22	60.00	100.00
Ohio	92.13	88.46	95.83	92.31	86.49	95.00	100.00	50.00	92.11	88.89	100.00
Oklahoma	91.50	100.00	82.14	91.84	89.16	94.29	--	93.55	90.12	91.30	94.44
Oregon	95.24	94.12	91.18	100.00	95.00	95.00	100.00	92.31	100.00	94.44	92.00
Pennsylvania	89.77	100.00	79.31	93.18	89.74	94.74	72.73	0.00	85.00	91.67	93.55
Rhode Island	92.42	94.74	90.91	92.86	92.16	100.00	0.00	60.00	92.86	100.00	92.86
South Carolina	96.15	100.00	93.75	96.00	94.87	97.37	100.00	66.67	95.45	95.83	100.00
South Dakota	85.37	57.14	100.00	87.32	80.00	90.48	--	84.85	84.38	100.00	71.43
Tennessee	94.51	91.30	84.21	100.00	89.19	97.50	100.00	100.00	91.18	95.65	96.77
Texas	93.65	92.75	91.30	94.85	95.45	98.21	88.06	75.00	95.38	97.96	94.55
Utah	93.90	87.50	97.44	92.59	97.50	92.31	66.67	60.00	100.00	100.00	93.33
Vermont	92.65	100.00	--	92.31	92.00	93.33	100.00	90.91	91.30	100.00	100.00
Virginia	91.67	95.65	84.00	94.44	92.11	97.22	70.00	80.00	88.89	100.00	90.63
Washington	96.04	93.10	96.67	97.62	97.73	92.31	100.00	83.33	97.30	100.00	92.59
West Virginia	89.04	87.50	80.00	90.91	79.31	94.74	100.00	100.00	83.72	92.31	100.00
Wisconsin	91.95	84.21	94.44	94.00	93.02	92.50	75.00	83.33	95.00	90.48	90.00
Wyoming	93.94	100.00	100.00	92.45	92.50	96.15	--	80.00	100.00	100.00	100.00
Midwest	90.79	86.06	89.43	93.03	89.86	93.01	83.12	83.82	92.19	92.09	92.23
Northeast	90.52	88.54	86.53	94.02	88.17	94.86	82.09	81.58	89.61	91.75	92.17
South	91.80	91.55	89.24	92.95	91.42	93.98	87.15	81.73	89.46	93.90	94.64
West	90.88	89.17	92.66	90.79	92.61	92.83	71.29	73.10	93.80	96.25	92.20

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Library Questionnaires).

Table A.16 - Public School Library Questionnaire: Percent of Responding Libraries, by State and School Characteristics (Weight: Basic library weight).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	90.07	88.13	88.42	91.98	89.87	92.27	76.12	79.86	89.92	93.25	91.56
Alabama	97.79	100.00	98.20	96.93	100.00	95.14	90.85	100.00	96.06	100.00	97.99
Alaska	73.84	81.34	100.00	71.97	87.70	78.95	56.71	55.35	95.10	87.34	80.42
Arizona	97.01	98.09	100.00	94.10	98.59	95.13	11.24	94.46	97.27	100.00	94.62
Arkansas	96.77	100.00	100.00	95.81	97.79	95.23	100.00	76.91	100.00	94.70	100.00
California	82.09	74.44	89.34	78.13	86.09	77.34	13.74	47.47	81.95	93.77	79.89
Colorado	89.23	91.42	86.99	89.96	85.46	100.00	100.00	100.00	83.29	94.10	100.00
Connecticut	86.92	84.57	97.02	82.86	85.85	91.76	62.27	100.00	82.88	94.63	87.39
Delaware	89.64	100.00	89.54	87.23	89.42	97.21	32.18	32.18	79.69	93.95	96.63
District of Columbia	85.44	85.44	--	--	88.30	88.53	0.00	--	86.82	80.10	91.85
Florida	97.52	97.53	95.47	100.00	100.00	90.36	91.81	90.47	88.77	100.00	99.27
Georgia	96.15	97.25	97.29	94.93	98.07	89.35	90.01	100.00	96.90	98.77	93.13
Hawaii	97.15	96.47	96.51	100.00	98.50	91.42	100.00	100.00	100.00	100.00	92.43
Idaho	94.85	94.17	95.30	94.82	92.86	98.55	100.00	100.00	92.51	100.00	85.53
Illinois	89.09	95.50	80.79	94.67	87.60	96.57	60.54	73.69	91.24	94.58	86.85
Indiana	96.53	100.00	92.22	96.09	95.29	100.00	100.00	--	97.01	93.83	100.00
Iowa	96.77	97.58	100.00	96.29	97.09	95.86	100.00	100.00	95.44	100.00	87.11
Kansas	95.02	86.57	94.70	96.14	94.94	95.20	100.00	93.69	95.57	94.93	100.00
Kentucky	84.62	90.25	88.14	82.59	85.13	82.88	100.00	30.92	89.67	87.73	79.71
Louisiana	80.22	77.30	64.87	86.95	77.93	88.24	77.63	35.03	80.42	82.84	78.91
Maine	89.51	100.00	57.47	90.77	86.47	100.00	100.00	88.60	91.24	81.60	100.00
Maryland	89.52	83.05	87.60	98.01	88.72	94.76	72.56	66.17	82.15	94.59	95.78
Massachusetts	87.64	89.26	82.57	92.69	86.38	92.01	100.00	--	87.45	81.34	97.39
Michigan	90.96	86.91	89.79	93.01	91.01	92.63	72.93	33.67	93.35	85.31	100.00
Minnesota	92.26	100.00	91.67	91.27	94.60	88.42	65.96	97.83	84.82	100.00	91.34
Mississippi	91.40	100.00	96.20	89.48	92.63	88.89	89.71	100.00	89.73	90.29	95.49
Missouri	93.10	83.58	93.00	94.86	92.68	94.44	85.81	97.52	90.42	100.00	93.02
Montana	85.80	100.00	100.00	83.54	84.70	87.20	100.00	77.72	98.34	78.16	100.00
Nebraska	79.77	72.79	84.69	79.69	78.11	83.89	81.85	76.13	90.25	69.76	49.04
Nevada	89.64	84.56	95.30	94.26	90.21	89.25	72.11	94.33	84.94	88.53	95.19
New Hampshire	96.39	100.00	81.59	98.21	95.23	100.00	100.00	100.00	96.51	92.68	100.00
New Jersey	83.05	62.73	83.08	100.00	79.77	96.47	72.55	67.24	82.15	91.80	78.77
New Mexico	89.87	87.64	91.53	90.10	88.09	95.14	100.00	76.87	88.03	100.00	93.96
New York	85.39	70.77	82.30	99.73	82.55	94.32	88.29	100.00	80.38	87.20	87.26
North Carolina	91.11	74.63	74.29	100.00	91.33	92.74	71.15	35.71	91.17	89.33	100.00
North Dakota	83.06	90.21	83.88	82.22	76.57	93.42	--	75.88	95.85	47.76	100.00
Ohio	88.62	87.83	94.31	85.61	85.70	95.04	100.00	74.35	88.31	86.03	100.00
Oklahoma	90.32	100.00	83.10	89.59	87.87	94.38	--	93.44	88.26	91.07	94.63
Oregon	94.68	97.76	87.44	100.00	93.96	96.45	100.00	88.79	100.00	91.99	92.90
Pennsylvania	91.96	100.00	83.88	95.14	91.60	95.04	59.63	0.00	94.24	91.67	90.70
Rhode Island	92.18	96.29	88.94	93.95	91.54	100.00	0.00	70.11	93.55	100.00	92.29
South Carolina	92.21	100.00	90.15	90.92	94.59	85.36	100.00	44.70	94.81	93.92	100.00
South Dakota	81.44	59.08	100.00	82.02	75.81	87.65	--	77.85	84.46	100.00	71.03
Tennessee	90.77	85.03	75.32	100.00	88.04	97.43	100.00	100.00	87.09	92.51	97.07
Texas	95.28	96.44	98.82	93.20	95.19	98.75	83.26	77.41	92.74	99.86	95.09
Utah	94.58	94.79	96.76	91.60	97.82	88.62	68.44	60.96	100.00	100.00	93.01
Vermont	91.92	100.00	--	91.57	91.58	91.77	100.00	89.94	91.29	100.00	100.00
Virginia	91.72	99.42	87.38	90.10	90.37	98.27	71.78	94.48	82.72	100.00	96.86
Washington	96.19	92.97	98.37	96.75	97.83	91.01	100.00	87.97	96.29	100.00	93.40
West Virginia	85.44	82.23	77.37	87.33	80.12	94.48	100.00	100.00	79.29	92.00	100.00
Wisconsin	92.03	81.85	99.48	92.40	92.19	91.79	84.80	76.31	94.85	91.96	95.36
Wyoming	87.16	100.00	100.00	85.27	84.16	93.71	--	73.33	100.00	100.00	100.00
Midwest	90.67	89.36	89.19	91.84	89.75	93.53	80.17	83.54	91.95	91.07	93.93
Northeast	87.73	80.86	83.55	94.87	85.84	94.91	82.06	89.87	86.37	89.35	88.00
South	92.34	93.23	89.59	92.93	92.35	93.52	85.59	83.66	89.58	95.50	95.39
West	87.61	83.32	90.95	87.75	89.61	86.67	50.20	71.01	90.03	95.15	85.78

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Library Questionnaires).

Table A.17 - Private School Library Questionnaire: Percent of Responding Libraries, by Type and School Characteristics (Weight: Unweighted).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	77.75	78.29	78.53	75.12	75.66	87.75	73.43	59.28	82.00	88.70	91.76
Area Frame	55.32	50.00	61.11	53.85	50.00	100.00	47.62	48.39	64.29	100.00	100.00
Association of Military Colleges and Schools of the U.S.	91.67	75.00	100.00	100.00	100.00	100.00	0.00	0.00	100.00	100.00	100.00
National Catholic Education Association, Jesuit Secondary	84.71	84.29	86.07	82.81	80.69	92.62	82.35	76.00	82.99	89.32	97.47
Friends Council on Education	84.85	90.91	76.47	100.00	81.25	66.67	100.00	63.64	90.00	100.00	100.00
National Association of Episcopal Schools	79.12	73.33	81.82	92.31	78.38	88.89	75.00	30.77	85.25	100.00	90.91
National Society of Hebrew Day Schools	64.20	60.00	76.00	0.00	68.63	58.33	50.00	52.94	62.50	84.62	66.67
Solomon Schechter Day Schools	96.43	100.00	95.00	--	96.30	--	100.00	100.00	94.74	100.00	100.00
Other Jewish	65.57	64.71	66.67	--	75.00	46.15	62.50	57.14	77.78	62.50	40.00
Lutheran Church - Missouri Synod	84.62	76.00	90.32	86.36	83.58	88.89	100.00	78.57	87.23	100.00	--
Evangelical Lutheran Church - Wisconsin	76.92	80.00	78.57	74.19	75.00	88.89	--	71.11	89.47	--	100.00
Evangelical Lutheran Church in America	71.88	76.47	54.55	100.00	71.88	--	--	72.73	68.42	100.00	--
Other Lutheran	81.82	66.67	80.00	100.00	80.00	--	100.00	83.33	80.00	--	--
General Conference of Seventh-Day Adventists	77.94	84.21	83.33	70.97	72.00	80.95	81.82	70.73	88.89	--	--
Christian Schools International	69.66	74.07	69.44	65.38	70.00	80.00	65.91	38.71	83.33	88.89	100.00
American Association of Christian Schools	63.86	75.00	58.62	57.69	61.54	100.00	62.96	51.16	77.42	75.00	100.00
National Association of Private Schools for Exceptional Children	80.00	100.00	0.00	100.00	--	100.00	66.67	100.00	50.00	100.00	--
American Montessori Society, other Montessori	51.02	58.33	41.67	100.00	47.62	--	71.43	45.45	62.50	--	--
National Association of Independent Schools	88.36	90.83	85.23	88.57	83.72	90.20	89.13	62.50	88.89	92.16	86.84
National Independent Private Schools Association	69.23	50.00	86.67	0.00	57.14	100.00	81.82	66.67	76.92	50.00	50.00
All Else	66.24	72.28	65.71	57.58	64.10	88.00	63.43	47.42	77.19	84.62	92.31
Catholic - Parochial	82.53	79.87	83.70	85.54	82.45	93.02	40.00	73.68	82.40	93.75	93.75
Catholic - Diocesan	84.30	84.55	88.30	73.68	76.34	93.20	100.00	78.57	81.76	84.62	100.00
Catholic - Private	92.54	94.20	89.29	100.00	84.62	92.23	100.00	87.50	91.53	90.91	97.06
Other Religious - Conservative Christian	66.81	75.00	61.04	61.90	66.67	86.67	64.75	50.47	79.00	82.35	100.00
Other Religious - Affiliated	75.20	74.31	76.47	74.70	76.32	78.72	70.31	60.53	80.75	87.80	83.33
Other Religious - Unaffiliated	69.36	67.86	72.22	68.35	72.79	72.22	60.32	59.83	76.04	100.00	83.33
Non-sectarian - Regular	84.84	82.91	88.68	81.48	74.67	89.29	88.36	58.06	87.18	89.09	91.43
Non-sectarian - Special emphasis	58.82	65.91	47.22	80.00	48.00	100.00	67.86	43.90	75.00	66.67	60.00
Non-sectarian - Special education	100.00	100.00	100.00	--	--	--	100.00	100.00	100.00	--	--
Catholic	84.89	84.38	86.32	83.08	80.78	92.77	83.33	75.95	83.30	89.42	97.50
Other religious	71.73	73.10	72.02	68.89	73.75	77.93	66.06	57.45	79.39	88.24	86.00
Non-sectarian	78.85	78.40	78.32	81.36	64.00	90.48	85.23	50.68	84.97	87.93	87.50
Midwest	82.42	84.30	81.97	81.22	81.08	93.60	72.53	69.68	87.54	94.00	88.57
Northeast	73.92	69.62	77.68	75.58	70.85	80.37	72.13	51.02	77.08	80.82	87.76
South	78.47	83.44	75.98	67.96	76.86	90.72	75.30	56.16	82.50	94.12	94.64
West	74.63	75.00	77.31	65.91	70.27	90.28	70.51	52.08	80.59	87.18	96.67

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

Table A.18 - Private School Library Questionnaire: Percent of Responding Libraries, by Type and School Characteristics (Weight: Basic library weight).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	70.69	74.14	70.27	66.11	71.82	86.42	60.47	51.65	80.93	86.74	91.99
Area Frame	59.45	54.24	60.72	61.30	64.76	100.00	47.25	52.89	75.66	100.00	100.00
Association of Military Colleges and Schools of the U.S.	81.32	59.50	100.00	100.00	100.00	100.00	0.00	0.00	100.00	100.00	100.00
National Catholic Education Association, Jesuit Secondary	81.74	80.10	84.00	81.20	80.19	91.32	78.88	74.27	82.00	86.91	95.99
Friends Council on Education	80.03	92.29	67.99	100.00	72.66	64.96	100.00	60.54	90.52	100.00	100.00
National Association of Episcopal Schools	77.93	75.40	75.41	93.26	78.84	85.93	72.61	28.92	87.49	100.00	90.08
National Society of Hebrew Day Schools	57.06	51.82	73.44	0.00	62.52	54.45	34.18	43.86	57.27	88.58	51.16
Solomon Schechter Day Schools	97.06	100.00	95.75	--	96.85	--	100.00	100.00	95.40	100.00	100.00
Other Jewish	58.68	61.49	55.04	--	76.58	29.85	51.73	47.86	72.87	60.94	32.01
Lutheran Church - Missouri Synod	80.41	70.92	87.19	83.83	79.91	83.81	100.00	78.32	81.59	100.00	--
Evangelical Lutheran Church - Wisconsin	72.65	75.05	66.16	73.55	71.14	89.47	--	68.23	89.57	--	100.00
Evangelical Lutheran Church in America	72.95	78.27	51.18	100.00	72.95	--	--	79.31	65.63	100.00	--
Other Lutheran	82.94	64.02	77.73	100.00	79.77	--	100.00	85.31	76.96	--	--
General Conference of Seventh-Day Adventists	63.87	84.81	57.76	57.42	58.80	79.90	71.04	58.04	91.04	--	--
Christian Schools International	57.34	74.81	43.12	57.56	55.25	68.24	58.06	38.89	83.19	89.22	100.00
American Association of Christian Schools	57.17	73.86	52.28	50.56	53.95	100.00	57.21	42.36	80.82	70.68	100.00
National Association of Private Schools for Exceptional Children	71.53	100.00	0.00	100.00	--	100.00	66.56	100.00	20.71	100.00	--
American Montessori Society, other Montessori	49.67	57.12	35.20	100.00	45.62	--	60.35	45.16	65.01	--	--
National Association of Independent Schools	87.12	88.27	86.10	86.28	85.05	88.15	87.98	59.61	89.21	90.77	86.54
National Independent Private Schools Association	60.15	39.53	81.61	0.00	47.36	100.00	77.06	52.49	71.30	40.81	67.09
All Else	52.87	64.05	46.51	45.27	48.11	85.27	55.10	35.63	75.13	87.18	91.09
Catholic - Parochial	80.96	76.61	83.04	85.39	81.26	92.39	24.44	71.37	82.56	93.06	89.91
Catholic - Diocesan	80.89	82.14	85.97	67.51	77.63	91.72	100.00	80.98	79.87	79.87	100.00
Catholic - Private	90.75	92.35	86.76	100.00	86.18	90.85	100.00	88.66	90.80	86.14	97.07
Other Religious - Conservative Christian	59.06	66.96	50.84	57.06	57.37	83.67	58.98	45.35	76.93	84.72	100.00
Other Religious - Affiliated	63.52	72.48	56.33	59.00	65.02	72.88	56.88	48.85	79.21	87.74	76.54
Other Religious - Unaffiliated	54.10	64.45	42.80	55.15	56.56	71.80	46.36	44.21	74.43	100.00	74.81
Non-sectarian - Regular	75.39	72.71	90.86	57.68	65.15	85.81	83.20	46.03	84.51	87.81	93.16
Non-sectarian - Special emphasis	56.24	62.13	45.62	87.93	52.87	100.00	57.95	45.26	77.60	35.26	71.91
Non-sectarian - Special education	100.00	100.00	100.00	--	--	--	100.00	100.00	100.00	--	--
Catholic	81.80	79.86	84.36	81.32	80.38	91.51	73.72	73.71	82.29	86.84	96.02
Other religious	59.16	68.54	50.68	56.88	60.21	74.27	55.49	46.03	77.29	88.43	83.49
Non-sectarian	70.34	69.28	77.33	59.27	60.88	87.20	78.00	46.05	83.27	84.17	91.49
Midwest	78.09	78.59	77.94	77.80	79.20	93.82	64.01	62.97	87.47	94.36	87.93
Northeast	62.59	65.32	63.00	56.81	62.81	78.43	47.70	35.78	73.45	73.98	90.54
South	70.56	79.96	67.10	56.36	73.11	90.34	63.15	50.83	80.84	93.25	93.48
West	68.55	69.40	73.19	59.10	68.01	85.24	62.21	48.99	80.16	85.05	97.24

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Library Questionnaires).

Table A.19 - Public School Librarian Questionnaire: Percent of Responding Librarians, by State and School Characteristics (Weight: Unweighted).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	93.49	91.45	93.17	94.64	92.71	94.88	90.55	87.86	93.09	93.02	95.68
Alabama	94.64	94.12	96.15	94.20	97.37	95.24	90.63	100.00	88.57	100.00	95.12
Alaska	87.50	93.33	100.00	84.78	91.67	92.86	71.43	60.00	96.55	93.33	100.00
Arizona	95.56	93.75	100.00	96.43	95.56	95.35	100.00	100.00	92.00	100.00	95.12
Arkansas	92.41	88.24	80.00	94.74	92.31	92.11	100.00	80.00	92.68	95.24	91.67
California	87.05	85.19	86.89	91.67	85.42	91.25	63.64	71.43	85.71	87.88	88.46
Colorado	90.28	83.33	88.46	96.43	82.35	97.14	100.00	100.00	93.94	73.68	100.00
Connecticut	96.97	94.44	100.00	96.55	93.10	100.00	100.00	--	96.30	100.00	95.00
Delaware	95.08	100.00	100.00	89.29	92.86	100.00	100.00	100.00	80.00	95.83	100.00
District of Columbia	85.00	85.00	--	--	82.93	100.00	0.00	--	87.50	78.95	88.89
Florida	95.33	98.08	90.00	96.00	94.74	91.67	100.00	100.00	89.47	94.12	97.01
Georgia	94.38	100.00	100.00	88.37	92.50	94.87	100.00	100.00	100.00	92.00	94.34
Hawaii	95.65	100.00	91.43	100.00	98.11	84.62	100.00	100.00	100.00	100.00	90.32
Idaho	95.52	100.00	100.00	93.18	96.30	94.87	100.00	100.00	93.10	94.44	100.00
Illinois	91.21	88.46	89.74	96.15	89.36	94.74	83.33	77.78	94.29	85.71	96.15
Indiana	97.50	100.00	95.65	97.22	97.14	97.44	100.00	--	96.97	95.65	100.00
Iowa	95.89	93.75	100.00	96.08	97.22	94.29	100.00	100.00	95.35	90.91	100.00
Kansas	94.87	100.00	90.91	94.92	97.37	92.31	100.00	100.00	91.89	92.86	100.00
Kentucky	92.00	100.00	86.67	91.67	89.19	94.59	100.00	66.67	96.00	92.31	90.48
Louisiana	98.94	96.00	100.00	100.00	97.06	100.00	100.00	100.00	97.14	100.00	100.00
Maine	91.23	100.00	50.00	92.31	88.89	96.43	50.00	80.00	90.00	93.75	100.00
Maryland	97.56	91.67	98.11	100.00	94.87	100.00	100.00	100.00	90.00	100.00	100.00
Massachusetts	91.40	90.91	90.48	93.10	83.33	93.94	100.00	--	96.30	86.96	90.70
Michigan	93.02	92.86	92.31	93.48	87.10	97.44	93.75	--	96.97	83.33	100.00
Minnesota	96.00	100.00	93.75	96.08	97.22	97.22	66.67	100.00	92.31	100.00	95.24
Mississippi	90.80	100.00	85.71	90.63	94.44	88.89	86.67	100.00	86.21	88.00	96.67
Missouri	97.40	100.00	94.44	98.08	94.29	100.00	100.00	100.00	95.00	100.00	100.00
Montana	92.68	100.00	100.00	90.91	90.00	95.12	100.00	81.82	100.00	100.00	100.00
Nebraska	81.43	70.00	87.10	100.00	83.87	81.08	50.00	85.00	87.50	70.00	62.50
Nevada	90.63	82.86	100.00	100.00	90.00	90.91	100.00	100.00	92.31	80.77	100.00
New Hampshire	98.18	100.00	100.00	97.37	96.88	100.00	100.00	100.00	100.00	91.67	100.00
New Jersey	94.94	100.00	92.86	100.00	93.94	97.50	83.33	75.00	95.45	89.47	100.00
New Mexico	93.94	94.44	93.75	93.75	93.94	93.75	100.00	100.00	90.91	94.12	96.00
New York	92.65	87.50	91.11	98.04	92.11	94.12	90.00	100.00	94.74	88.57	93.33
North Carolina	95.74	88.89	100.00	98.28	95.56	95.12	100.00	66.67	96.67	96.43	96.97
North Dakota	91.18	88.89	100.00	90.74	86.67	94.74	--	79.17	100.00	80.00	100.00
Ohio	90.54	95.24	85.71	90.63	84.62	92.31	100.00	100.00	84.62	87.50	100.00
Oklahoma	94.41	100.00	89.29	94.38	94.67	94.12	--	92.31	93.42	95.65	100.00
Oregon	94.29	80.00	96.67	100.00	93.55	94.59	100.00	100.00	91.67	93.75	96.00
Pennsylvania	97.59	100.00	96.30	97.62	100.00	97.30	88.89	--	94.44	100.00	96.67
Rhode Island	95.38	94.44	93.94	100.00	94.12	100.00	100.00	100.00	89.29	100.00	100.00
South Carolina	97.40	100.00	93.75	97.96	97.44	97.30	100.00	100.00	100.00	91.67	100.00
South Dakota	90.91	71.43	100.00	92.73	88.24	93.75	--	87.50	96.15	88.89	85.71
Tennessee	92.13	86.96	88.89	95.83	85.71	95.00	100.00	66.67	84.38	100.00	96.77
Texas	90.48	90.63	95.45	89.02	85.00	98.21	88.46	100.00	81.82	91.67	96.30
Utah	95.65	85.71	97.06	100.00	96.97	94.29	100.00	--	92.86	100.00	95.35
Vermont	95.08	66.67	--	96.55	97.67	93.33	66.67	100.00	95.35	100.00	80.00
Virginia	90.24	91.30	83.33	94.29	92.11	91.43	77.78	100.00	85.19	100.00	87.50
Washington	97.85	96.30	96.55	100.00	97.50	97.30	100.00	66.67	97.06	100.00	100.00
West Virginia	95.16	100.00	100.00	93.62	90.91	100.00	80.00	100.00	91.67	100.00	100.00
Wisconsin	93.98	88.24	94.44	95.83	97.50	92.31	75.00	100.00	97.44	84.21	95.00
Wyoming	96.23	100.00	100.00	95.45	100.00	91.67	--	84.62	100.00	100.00	100.00
Midwest	92.94	89.13	91.74	94.80	92.12	93.97	90.74	89.52	94.26	89.22	96.35
Northeast	94.53	92.75	93.07	96.32	93.95	96.31	87.50	92.00	94.66	94.02	95.09
South	93.66	92.91	93.77	93.99	92.26	95.53	92.52	91.67	90.45	94.74	96.28
West	92.99	90.21	93.64	94.41	93.05	93.81	85.96	81.52	94.72	92.50	94.77

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Librarian Questionnaires).

Table A.20 - Public School Librarian Questionnaire: Percent of Responding Librarians, by State and School Characteristics (Weight: Basic librarian weight).

State or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	92.30	89.97	91.68	93.86	91.67	94.21	89.65	90.48	92.34	91.22	94.46
Alabama	95.86	91.61	98.10	96.31	97.37	95.04	89.67	100.00	92.74	100.00	96.59
Alaska	80.79	92.73	100.00	76.70	87.75	87.04	56.77	49.10	96.66	92.76	100.00
Arizona	95.36	93.43	100.00	96.63	95.59	94.69	100.00	100.00	92.32	100.00	94.06
Arkansas	91.59	86.52	77.94	93.81	92.44	90.19	100.00	76.91	92.76	94.04	91.04
California	87.51	86.63	86.34	91.20	86.68	91.73	56.93	94.75	97.05	83.92	83.27
Colorado	87.08	74.61	84.56	95.25	83.16	97.24	100.00	100.00	91.79	71.63	100.00
Connecticut	96.03	93.79	100.00	94.76	94.52	100.00	100.00	--	95.89	100.00	90.73
Delaware	93.79	100.00	100.00	86.22	91.40	100.00	100.00	100.00	77.44	95.64	100.00
District of Columbia	86.13	86.13	--	--	83.39	100.00	0.00	--	88.19	79.47	91.85
Florida	93.92	98.69	89.68	88.49	93.84	92.30	100.00	100.00	79.16	92.30	98.49
Georgia	93.60	100.00	100.00	86.74	93.21	94.33	100.00	100.00	100.00	92.86	90.64
Hawaii	95.47	100.00	90.64	100.00	98.56	82.67	100.00	100.00	100.00	100.00	88.00
Idaho	94.75	100.00	100.00	92.21	95.03	94.28	100.00	100.00	91.68	95.78	100.00
Illinois	91.04	84.62	91.45	95.33	90.77	92.22	75.17	83.40	94.15	84.13	96.30
Indiana	97.43	100.00	92.22	98.34	97.47	97.20	100.00	--	98.65	93.83	100.00
Iowa	96.39	96.30	100.00	96.05	96.97	94.91	100.00	100.00	95.16	94.59	100.00
Kansas	95.87	100.00	94.70	95.47	97.47	92.11	100.00	100.00	93.14	94.93	100.00
Kentucky	90.29	100.00	78.55	90.53	90.17	90.44	100.00	42.69	94.93	92.97	80.91
Louisiana	97.88	93.08	100.00	100.00	96.83	100.00	100.00	100.00	95.32	100.00	100.00
Maine	90.65	100.00	25.05	93.51	89.08	97.17	40.71	78.26	91.74	96.22	100.00
Maryland	95.41	83.05	96.26	100.00	94.34	100.00	100.00	100.00	88.53	100.00	100.00
Massachusetts	88.54	97.08	87.62	84.01	86.49	93.43	100.00	--	98.82	74.17	77.08
Michigan	90.62	86.55	88.45	93.63	87.73	97.47	92.70	--	99.65	76.21	100.00
Minnesota	97.07	100.00	95.78	96.94	97.08	97.90	64.08	100.00	94.38	100.00	95.61
Mississippi	91.06	100.00	90.33	89.86	93.53	87.81	84.98	100.00	87.41	89.58	97.39
Missouri	96.22	100.00	91.70	97.29	94.42	100.00	100.00	100.00	93.98	100.00	100.00
Montana	89.94	100.00	100.00	88.29	87.04	93.17	100.00	81.33	100.00	100.00	100.00
Nebraska	84.84	71.52	94.11	100.00	84.63	85.47	75.17	87.64	88.35	69.76	64.52
Nevada	89.71	80.95	100.00	100.00	89.99	88.58	100.00	100.00	92.34	80.70	100.00
New Hampshire	98.22	100.00	100.00	97.46	97.46	100.00	100.00	100.00	100.00	91.22	100.00
New Jersey	94.51	100.00	92.90	100.00	94.12	96.88	77.32	70.91	95.40	86.79	100.00
New Mexico	93.54	97.81	89.85	93.10	93.10	94.38	100.00	100.00	90.10	95.08	97.68
New York	91.61	89.45	90.31	94.35	91.16	93.02	92.15	100.00	87.53	90.41	97.32
North Carolina	95.50	84.64	100.00	99.24	96.05	93.16	100.00	35.11	96.61	95.66	97.05
North Dakota	87.62	86.61	100.00	86.92	81.88	94.21	--	76.25	100.00	75.24	100.00
Ohio	85.55	95.60	80.44	84.01	82.17	90.89	100.00	100.00	83.83	79.76	100.00
Oklahoma	94.04	100.00	89.10	93.75	94.76	92.95	--	92.61	93.59	95.68	100.00
Oregon	93.50	74.98	97.99	100.00	92.95	94.60	100.00	100.00	91.35	93.28	96.02
Pennsylvania	99.46	100.00	99.68	99.20	100.00	98.23	89.31	--	99.67	100.00	97.90
Rhode Island	94.73	93.94	93.13	100.00	93.50	100.00	100.00	100.00	89.84	100.00	100.00
South Carolina	97.50	100.00	90.15	98.88	97.70	96.79	100.00	100.00	100.00	91.37	100.00
South Dakota	91.23	66.85	100.00	92.71	88.79	94.62	--	88.35	96.38	91.54	81.42
Tennessee	86.29	81.18	74.73	93.27	83.03	93.01	100.00	21.73	82.85	100.00	92.12
Texas	87.18	83.70	99.46	86.82	83.91	96.56	89.02	100.00	75.16	93.50	92.62
Utah	96.02	85.38	98.23	100.00	96.47	94.93	100.00	--	92.41	100.00	96.62
Vermont	95.62	77.62	--	96.50	97.68	95.21	60.38	100.00	95.19	100.00	80.06
Virginia	90.62	91.99	86.52	92.06	90.60	91.20	85.76	100.00	80.98	100.00	94.28
Washington	96.77	94.22	94.04	100.00	97.63	93.95	100.00	79.37	96.13	100.00	100.00
West Virginia	93.62	100.00	100.00	91.64	90.41	100.00	80.92	100.00	90.68	100.00	100.00
Wisconsin	96.41	87.74	99.48	97.54	98.11	92.29	84.80	100.00	98.52	87.99	98.95
Wyoming	94.97	100.00	100.00	94.35	100.00	87.00	--	86.73	100.00	100.00	100.00
Midwest	92.56	89.94	90.67	94.39	91.92	94.04	90.71	93.30	94.03	86.18	97.90
Northeast	94.22	93.70	92.95	95.72	93.83	95.99	88.32	94.32	94.27	93.20	95.60
South	92.03	89.98	93.12	92.72	91.16	94.30	93.22	86.84	88.37	95.10	95.13
West	90.67	87.79	89.81	93.68	90.19	92.90	75.93	86.59	94.82	88.16	89.54

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public Librarian Questionnaires).

Table A.21 - Private School Librarian Questionnaire: Percent of Responding Librarians, by Type and School Characteristics (Weight: Unweighted).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	83.92	85.34	83.27	81.57	80.14	91.52	81.91	53.76	86.08	92.75	93.90
Area Frame	42.11	50.00	55.56	0.00	50.00	100.00	0.00	28.57	40.00	100.00	100.00
Association of Military Colleges and Schools of the U.S.	91.67	75.00	100.00	100.00	100.00	100.00	0.00	0.00	100.00	100.00	100.00
National Catholic Education Association, Jesuit Secondary	88.57	89.19	88.26	87.34	82.70	94.83	96.67	81.08	86.18	96.84	92.41
Friends Council on Education	96.30	100.00	90.91	100.00	100.00	80.00	100.00	83.33	100.00	100.00	100.00
National Association of Episcopal Schools	91.25	89.47	90.63	100.00	85.19	100.00	91.43	55.56	94.44	100.00	100.00
National Society of Hebrew Day Schools	56.86	54.55	64.71	0.00	60.53	40.00	66.67	54.55	53.57	63.64	100.00
Solomon Schechter Day Schools	100.00	100.00	100.00	--	100.00	--	100.00	100.00	100.00	100.00	100.00
Other Jewish	71.05	72.22	70.00	--	83.33	57.14	61.54	66.67	80.95	20.00	100.00
Lutheran Church - Missouri Synod	83.33	88.89	91.67	33.33	75.00	100.00	100.00	33.33	89.47	100.00	--
Evangelical Lutheran Church - Wisconsin	58.33	50.00	50.00	66.67	33.33	83.33	--	33.33	80.00	--	100.00
Evangelical Lutheran Church in America	90.91	100.00	75.00	100.00	90.91	--	--	50.00	100.00	100.00	--
Other Lutheran	50.00	100.00	50.00	0.00	50.00	--	--	0.00	66.67	--	--
General Conference of Seventh-Day Adventists	76.00	71.43	80.00	75.00	57.14	85.71	81.82	42.86	88.89	--	--
Christian Schools International	72.58	61.90	83.33	70.59	76.47	84.62	65.63	30.77	84.85	77.78	85.71
American Association of Christian Schools	66.67	93.33	40.00	66.67	66.67	100.00	62.50	46.15	76.47	80.00	100.00
National Association of Private Schools for Exceptional Children	100.00	100.00	--	100.00	--	100.00	100.00	100.00	100.00	100.00	--
American Montessori Society, other Montessori	60.00	40.00	80.00	--	42.86	--	100.00	40.00	80.00	--	--
National Association of Independent Schools	93.64	95.24	92.59	91.18	91.89	89.58	95.56	100.00	91.47	98.04	94.74
National Independent Private Schools Association	64.29	100.00	54.55	--	66.67	0.00	71.43	0.00	77.78	100.00	100.00
All Else	75.38	77.78	71.43	76.47	76.47	93.33	71.60	37.50	85.71	100.00	91.67
Catholic - Parochial	85.43	80.77	88.66	89.13	83.92	94.87	77.78	84.00	83.71	96.43	87.50
Catholic - Diocesan	88.65	92.13	86.96	81.48	80.25	94.85	100.00	66.67	86.49	97.14	93.33
Catholic - Private	94.49	97.06	90.38	100.00	80.00	95.05	100.00	83.33	94.44	96.97	94.12
Other Religious - Conservative Christian	74.51	76.60	65.71	85.00	75.86	100.00	70.31	50.00	83.02	84.62	87.50
Other Religious - Affiliated	79.43	80.42	81.95	67.50	81.65	80.70	75.25	53.45	84.85	76.47	100.00
Other Religious - Unaffiliated	64.08	67.57	60.00	65.38	50.00	82.76	62.50	25.00	76.92	87.50	100.00
Non-sectarian - Regular	91.21	94.95	88.04	89.58	87.50	90.20	92.86	62.50	90.21	98.11	91.43
Non-sectarian - Special emphasis	85.71	78.95	92.31	100.00	60.00	100.00	94.74	33.33	95.45	100.00	100.00
Non-sectarian - Special education	100.00	100.00	100.00	--	--	--	100.00	100.00	100.00	--	--
Catholic	88.55	88.89	88.53	87.50	82.76	94.94	93.75	80.00	86.30	96.88	92.50
Other religious	75.43	77.53	75.00	70.93	76.02	83.16	71.22	44.92	83.17	80.00	97.78
Non-sectarian	90.58	92.44	88.68	90.20	82.76	91.23	93.17	53.33	90.96	98.21	92.31
Midwest	84.32	83.33	83.66	87.32	82.32	90.00	79.69	58.82	88.78	89.36	88.57
Northeast	81.68	80.50	83.14	80.65	76.40	87.41	82.47	55.00	82.45	87.50	93.18
South	85.18	87.28	84.62	79.10	81.82	96.59	82.51	54.39	86.85	96.77	96.36
West	85.00	90.57	80.52	70.59	80.00	96.43	81.48	40.00	87.39	100.00	96.67

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

Table A.22 - Private School Librarian Questionnaire: Percent of Responding Librarians, by Type and School Characteristics (Weight: Basic librarian weight).

Frame, Nine Level Sector, Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	76.50	81.24	73.54	71.79	76.38	91.25	66.58	43.58	84.37	93.36	91.10
Area Frame	34.94	29.58	53.33	0.00	58.39	100.00	0.00	23.35	43.10	100.00	100.00
Association of Military Colleges and Schools of the U.S.	81.32	59.50	100.00	100.00	100.00	100.00	0.00	0.00	100.00	100.00	100.00
National Catholic Education Association, Jesuit Secondary	85.77	87.23	84.75	84.06	83.12	94.31	95.63	84.00	84.12	95.04	89.58
Friends Council on Education	94.67	100.00	86.66	100.00	100.00	77.01	100.00	81.80	100.00	100.00	100.00
National Association of Episcopal Schools	87.67	88.14	83.64	100.00	83.19	100.00	89.03	48.68	93.20	100.00	100.00
National Society of Hebrew Day Schools	53.95	49.41	68.49	0.00	55.03	41.87	79.33	39.51	52.95	75.40	100.00
Solomon Schechter Day Schools	100.00	100.00	100.00	--	100.00	--	100.00	100.00	100.00	100.00	100.00
Other Jewish	60.07	65.32	54.80	--	83.45	35.21	46.63	55.06	67.88	15.00	100.00
Lutheran Church - Missouri Synod	73.83	85.08	91.37	21.98	66.61	100.00	100.00	15.92	88.12	100.00	--
Evangelical Lutheran Church - Wisconsin	42.56	31.22	22.88	60.04	26.97	79.66	--	26.97	77.28	--	100.00
Evangelical Lutheran Church in America	89.82	100.00	68.91	100.00	89.82	--	--	56.95	100.00	100.00	--
Other Lutheran	39.29	100.00	34.99	0.00	39.29	--	--	0.00	59.72	--	--
General Conference of Seventh-Day Adventists	54.92	60.84	52.44	51.07	38.73	87.20	77.20	24.99	93.06	--	--
Christian Schools International	55.28	51.53	57.81	56.72	56.56	68.60	49.51	16.10	83.40	76.28	75.50
American Association of Christian Schools	63.72	89.61	30.65	71.09	80.13	100.00	59.25	47.60	76.86	74.53	100.00
National Association of Private Schools for Exceptional Children	100.00	100.00	--	100.00	--	100.00	100.00	100.00	100.00	100.00	--
American Montessori Society, other Montessori	55.13	38.75	81.66	--	29.57	--	100.00	39.40	81.34	--	--
National Association of Independent Schools	93.14	94.46	92.68	90.42	91.62	88.48	95.99	100.00	91.33	98.11	95.11
National Independent Private Schools Association	57.65	100.00	47.61	--	62.91	0.00	56.51	0.00	74.09	100.00	100.00
All Else	59.61	68.85	48.28	62.73	55.79	93.71	60.23	22.87	86.77	100.00	92.35
Catholic - Parochial	84.80	81.35	87.75	86.80	84.72	94.17	58.50	85.53	83.44	96.15	80.25
Catholic - Diocesan	84.34	91.69	78.79	75.98	79.87	93.84	100.00	67.54	83.20	95.61	93.02
Catholic - Private	92.84	95.32	88.52	100.00	80.84	95.19	100.00	88.53	93.39	91.86	93.88
Other Religious - Conservative Christian	71.24	67.44	65.65	86.59	82.87	100.00	63.16	48.43	84.78	85.63	86.50
Other Religious - Affiliated	65.14	75.36	63.61	44.46	68.63	75.75	56.49	26.64	84.71	76.18	100.00
Other Religious - Unaffiliated	35.41	58.63	21.58	36.18	26.28	76.14	37.72	9.69	73.91	82.19	100.00
Non-sectarian - Regular	88.46	90.92	87.48	85.94	88.31	89.99	88.12	70.25	87.42	98.56	89.55
Non-sectarian - Special emphasis	79.17	67.97	92.81	100.00	61.99	100.00	93.47	23.10	95.60	100.00	100.00
Non-sectarian - Special education	100.00	100.00	100.00	--	--	--	100.00	100.00	100.00	--	--
Catholic	85.63	86.50	85.25	84.12	83.27	94.45	85.40	82.15	84.29	95.02	89.67
Other religious	57.95	69.34	49.07	53.07	56.93	79.63	54.58	24.84	82.52	81.13	95.25
Non-sectarian	87.25	86.70	88.28	86.39	82.88	90.92	88.84	54.45	88.53	98.66	90.27
Midwest	83.11	85.53	79.37	85.21	85.05	90.12	66.04	64.04	87.85	92.43	80.92
Northeast	68.00	75.41	65.15	61.67	64.50	87.49	57.13	33.46	77.73	86.84	93.75
South	76.84	79.60	76.50	70.64	77.21	97.61	70.17	38.90	84.46	96.60	95.22
West	78.16	85.06	76.33	56.92	77.84	93.44	68.05	38.02	87.92	100.00	93.67

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Librarian Questionnaires).

Table A.23 - Public School Student Record Questionnaire: Percent of Responding Public Schools, by School Characteristics (Weight: Unweighted).

		Urbanicity			School Level			School Size			
Region	Overall	Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	90.23	92.41	89.84	89.90	90.24	90.50	89.46	91.78	89.72	90.12	89.97
Midwest	94.74	96.27	97.91	93.59	94.28	94.76	98.39	97.89	91.78	97.96	97.46
Northeast	89.73	98.21	88.60	88.28	89.66	88.37	97.06	61.54	90.13	93.18	88.39
South	91.79	96.28	92.15	91.07	91.63	91.62	93.18	93.91	90.54	93.88	91.54
West	86.64	86.60	82.54	87.31	86.82	86.87	85.93	88.89	87.49	81.67	86.27

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires)

Table A.24 - Public School Student Record Questionnaire: Percent of Responding Public Schools, School Characteristics (Weight: Adjusted basic student weight).

		Urbanicity			School Level			School Size			
Region	Overall	Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	91.31	94.99	87.74	91.57	91.67	90.43	94.67	97.49	91.49	94.13	88.59
Midwest	96.90	99.95	99.04	93.15	96.86	96.89	99.97	98.72	95.05	98.45	98.32
Northeast	91.12	99.17	89.99	87.01	92.78	87.88	89.91	80.11	90.79	97.50	84.88
South	92.81	96.13	94.28	90.38	94.44	89.73	94.49	98.90	92.52	99.03	89.15
West	83.20	86.85	73.42	97.87	81.04	86.44	95.62	92.69	82.40	78.30	85.45

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Public School Student Record Questionnaires)

Table A.25 - Private School Student Record Questionnaire: Percent of Responding Private Schools, by Type and School Characteristics (Weight: Unweighted).

Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	87.60	92.18	82.43	89.02	89.93	87.45	83.46	84.88	90.86	74.63	93.75
Catholic	90.74	93.81	85.94	94.00	91.99	85.51	100.00	88.57	92.91	78.38	100.00
Other Religious	88.72	88.29	85.03	93.96	91.58	98.73	78.79	89.04	88.85	78.57	100.00
Nonsectarian	81.40	97.00	75.00	75.00	79.25	73.91	84.38	75.76	90.41	62.50	82.35
Midwest	94.60	96.30	90.48	97.46	95.41	98.78	84.62	96.72	98.00	88.00	80.00
Northeast	85.96	88.39	82.47	88.89	89.66	76.36	91.67	87.78	88.43	65.00	100.00
South	80.89	88.24	73.91	80.90	80.70	100.00	77.44	71.15	83.41	66.67	100.00
West	90.77	96.83	86.17	82.50	92.76	82.35	90.54	82.46	98.51	75.00	100.00

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires

Table A.26 - Private School Student Record Questionnaire: Percent of Responding Private Schools, by Type and School Characteristics
(Weight: Adjusted basic student weight).

Three Level Sector or Region	Overall	Urbanicity			School Level			School Size			
		Central City	Urban Fringe/Large Town	Rural/Small Town	Elementary	Secondary	Combined	1 to 149 Students	150 to 499 Students	500 to 749 Students	750 or More Students
National	88.05	92.23	83.03	91.45	91.15	88.76	81.96	83.69	91.19	77.49	94.72
Catholic	92.69	94.49	90.39	95.28	93.24	89.52	100.00	95.45	93.90	83.97	100.00
Other Religious	85.16	88.56	76.86	95.48	88.40	99.30	81.00	84.00	87.27	70.51	100.00
Nonsectarian	79.20	93.13	69.27	78.29	78.26	68.54	80.90	71.34	88.88	56.40	82.95
Midwest	92.62	96.81	86.25	97.98	92.46	98.06	86.23	98.02	97.06	86.48	82.40
Northeast	87.66	89.33	84.00	92.24	92.33	72.04	88.13	88.55	89.52	74.81	100.00
South	82.41	88.97	76.48	86.12	87.05	100.00	76.08	65.96	84.56	67.98	100.00
West	93.14	94.81	93.56	87.05	93.76	89.46	93.11	83.51	98.64	46.64	100.00

An em-dash (--) denotes unknown or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School Student Record Questionnaires

Appendix B

Tests of Association Between Response Status and Characteristics

This appendix includes a description of the test used in chapters 2 and 3 to study the possible association between the response status (either respondent or nonrespondent) and a variable of interest.

Consider a 2 row by k column contingency table (Table B.1). The row variable is response status, and the column variable is the variable of interest having k categories. For the tests performed in chapter 3, the column variable could be urbanicity, k=3 levels (Table B.2), or school size, k=4 levels. For chapter 4 tests, the column variable could be LEA status or administrator status, both with k=2 levels (Table B.3).

Table B.1 -- General contingency table.

	Column 1	...	Column j	...	Column k	Row Marginal
Respondent	p_{11}	...	p_{1j}	...	p_{1k}	$p_{1.}$
Nonrespondent	p_{21}	...	p_{2j}	...	p_{2k}	$p_{2.}$
Column Marginal	$p_{.1}$	...	$p_{.j}$	...	$p_{.k}$	1

NOTE: $\sum_j p_{ij} = p_{i.}, \sum_i p_{ij} = p_{.j}, \sum_i p_{i.} = \sum_j p_{.j} = 1.$

To test for an association between response status and the variable of interest we test the hypothesis that response status, the row variable, is independent of the variable of interest, the column variable (Table B.1). Formally stated, we are testing:

$$H_o: \; p_{ij} = p_{i.} \times p_{.j} \qquad i=1, 2; j=1, 2, ..., k.$$

or

$$H_o: \frac{p_{ij}}{p_{.j}} = p_{i.} \qquad i = 1,2; \; j = 1,2,...,k.$$

Notice $\frac{p_{ij}}{p_{.j}}$ is the proportion of cases in cell ij treating the cases in column j as the total. So when i=1 the hypothesis is that the response rates are equal across the k categories. When i=2 the hypothesis is that the nonresponse rates are equal across the k categories. Hence, we are testing whether the response rates across the k categories are equal or not.

Table B.2: Example contingency table for chapter 3 tests.

	Rural/Small town	Urban Fringe/Large Town	Central City	Row Marginal
Respondent	p_{11}	p_{12}	p_{13}	$p_{1.}$
Nonrespondent	p_{21}	p_{22}	p_{23}	$p_{2.}$
Column Marginal	$p_{.1}$	$p_{.2}$	$p_{.3\backslash}$	1

Table B.3: Example contingency table for chapter 4 tests.

	LEA Status		
School Status	Respondent	Nonresponden t	Row Marginal
Respondent	p_{11}	p_{12}	$p_{1.}$
Nonrespondent	p_{21}	p_{22}	$p_{2.}$
Column Marginal	$p_{.1}$	$p_{.2}$	1

This type of test normally employs the conventional Pearson chi-squared statistic. For a complex survey design, such as the Schools and Staffing Survey, more appropriate chi-squared statistics have been developed by Rao and Scott.[B1] We use two of their statistics, 1) Rao-Scott2 (RS2) and 2) Rao-Scott3 (RS3) ("RS2" and "RS3" are terms used in WesVar PC software). These chi-square statistics rely on modifying the Pearson chi-square statistic using an estimated design effect.[B2] To construct the RS2 test for contingency table B.1, the average design effect

[B1] Rao and Scott (1981), "The Analysis of Categorical Data from Complex Sample Surveys: Chi-squared Tests for Goodness of Fit and Independence in Two-way Tables," *Journal of the American Statistical Association*, 76: 221-230. Rao and Scott (1984), "On Chi-squared Tests for Multiway Contingency Tables with Cell Proportions Estimated from Survey Data," *The Annals of Statistics*, 12: 46-60.

[B2] The design effect is equal to the variance under the complex survey design divided by the variance under simple random sampling. See Särndal, Swensson, and Wretman (1992),*Model Assisted Survey Sampling*.

$$\bar{b}_{RS2} = \frac{n}{k-1}\left[\sum_{i=1}^{2}\sum_{j=1}^{k}\frac{v_{ij}}{p_{i.}p_{.j}} - \sum_{i=1}^{2}\frac{v_{i.}}{p_{i.}} - \sum_{j=1}^{k}\frac{v_{.j}}{p_{.j}}\right]$$

needs to be calculate first, where n is the unweighted sample size used by the crosstabulation, and $v_{ij} = v(p_{ij})$ is the variance corresponding to p_{ij}. Then the adjusted chi-square statistic RS2 is calculated as

$$RS2: \quad \frac{c^2}{\bar{b}_{RS2}},$$

where c^2 is the usual Pearson chi-square statistic given by

$$c^2 = \frac{n\sum_{i=1}^{2}\sum_{j=1}^{k}(p_{ij} - p_{i.}p_{.j})^2}{p_{i.}p_{.j}}.$$

The RS2 statistic is assumed to have chi-square distribution with (k-1) degrees of freedom, under the hypothesis of independence.

The adjusted chi-square statistic, RS3, is based on Satterthwaite's approximation and is considerably more complex.[B3] The first step in the calculation of RS3 is to form the following vector:

$$Y = \sqrt{n}\begin{pmatrix} p_{11} - p_{1.}p_{.1} \\ \vdots \\ p_{1k} - p_{1.}p_{.k} \\ p_{21} - p_{2.}p_{.k} \\ \vdots \\ p_{2k} - p_{2.}p_{.k} \end{pmatrix} \equiv \begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_{2k} \end{pmatrix}.$$

An 2k×1 vector made up of the products of the marginal proportions,*P*, is defined as

$$P = \begin{pmatrix} p_{1.}p_{.1} \\ \vdots \\ p_{1.}p_{.k} \\ p_{2.}p_{.k} \\ \vdots \\ p_{2.}p_{.k} \end{pmatrix} \equiv \begin{pmatrix} P_1 \\ P_2 \\ \vdots \\ P_{2k} \end{pmatrix}.$$

[B3] Satterthwaite (1946), "An Approximate Distribution of Estimates of Variance Components,"*Biometrics*, 2: 110-114.

For each replicate, an 2k×2k matrix is calculated whose ij-th element is $(y_{ig} - y_i)(y_{jg} - y_j)$, where y_{ig} and y_{jg} are the *i*-th and *j*-th elements of Y calculated for the *g*-th replicate and y_i and y_j are the corresponding parent sample values. The *ij*-th element of the covariance matrix for Y, B= cov(Y), is calculated using the following formula (for BRR, modified slightly for other replication methods):

$$B_{ij} = \frac{\sum_{g=1}^{G} (y_{ig} - y_i)(y_{jg} - y_j)}{G}.$$

The degree of freedom for the chi-square statistic to be calculated is

$$v = \frac{\left(\sum_{i=1}^{2k} \frac{B_{ij}}{P_i}\right)^2}{\sum_{i=1}^{2k}\sum_{j=1}^{2k} \frac{B_{ij}^2}{P_i P_j}}.$$

Since v will not generally be an integer, interpolation in standard chi-square tables is required.

Finally, the RS3 test statistic using Satterthwaite's approximation, is calculated as

$$\text{RS3:} \quad \frac{vc^2}{\sum_{i=1}^{2k} \frac{B_{ii}}{P_i}}.$$

RS3 is the preferred statistic and is used in this analysis whenever available.

A program developed by Westat Inc., WesVar PC®, provides a convenient procedure for calculating both the RS2 and RS3 statistics.[B4] For more detail about the RS2 and RS3 statistics calculated by WesVar PC® see *A User's Guide to WesVarPC*, Westat, March 1996.[B5]

[B4] Westat, Inc. (1996), *A User's Guide to WesVar PC®*.

[B5] For design effects WesVar PC® calculates the variance under simple random sampling using a with replacement approach. See Westat, Inc. (1996), *A User's Guide to WesVar PC®* and Kish (1995), "Methods for Design Effects," *Journal of Official Statistics*, 11(1): 55-77.