

## **Chapter 4**

### **Presentation and Analysis of the Data**

#### **Introduction**

The previous chapter presented information on the sample, instrumentation, process for data collection, and a brief description of the method of analysis. This chapter presents a complete description of the findings.

The purposes of this study were two fold: 1) To examine school district variables in terms of their contribution to student achievement, and 2) To specifically examine the contribution of a measure of conflict within the school district to student achievement in that school district.

Of the original 50 districts selected to participate in the study only those with a survey return rate of at least three teacher surveys per district were used in the study. This resulted in a sample school district population of 38 school districts (Appendix F). The results of the statistical analysis of the data is described in the following tables. The frequencies and histograms of the data are displayed in Appendix G.

#### **Organizational Variables**

The organizational variables analyzed for each school district included pupil-teacher ratio (PT), administrative intensity (AT), the number of professional support staff (PS), and staff qualifications (SQ) as defined in Chapter 3. The organizational variable data for each school district is listed in Table 4.1.

Table 4.1

Organizational Variables

(PT=Pupil Teacher Ratio; AT=Administrative Intensity; PS=Professional Support Staff;  
SQ=Staff Qualifications)

School	PT	AT	PS	SQ
Alma	12	2.0	0.87	29
Anselmo-Myrna	12	2.0	0.95	22
Ashland Greenwood	15	3.0	2.82	52
Axtell	14	1.5	1.00	31
Bayard	14	3.0	2.40	27
Bloomfield	10	2.0	1.27	23
Centennial	14	4.0	2.0	36
Central City	05	4.0	2.87	40
Chappell	12	2.0	0.80	12
Coleridge	11	1.0	0.67	24
Conestoga	23	3.0	4.0	29
Dodge	09	1.37	0.75	08
Elkhorn Valley	13	1.0	1.0	18
Exter	13	1.33	0.75	21
Hartington	11	2.50	2.60	64
Humphrey	09	2.50	1.90	14
Lewisville	12	3.00	1.00	27
Lyons-Decatur	13	3.00	1.75	12
Mitchell	14	3.75	3.00	13
Morrill	13	3.00	1.00	23
Newcastle	09	1.00	0.86	30
Niobrara	08	2.00	1.00	29
North Loup Scotia	11	2.29	0.94	41
Plamer	12	1.75	0.62	23
Ponca	14	2.00	1.00	30
Ravenna	13	2.70	1.70	51
Red Cloud	14	2.00	0.80	20
Sargent	12	1.50	0.60	04
Scribner-Sydney	10	2.00	1.68	23
Shickley	08	2.00	0.50	38
Spencer-Naper	11	1.50	0.50	14
St. Paul	14	3.00	2.88	22
Stuart	10	1.13	1.00	19
Sutherland	13	3.00	1.10	23
Wilber-Clatonia	17	3.00	2.50	53
Wilcox	11	1.50	0.50	33

Winnebago	10	3.80	2.00	22
Wisner-Pilger	14	3.00	1.10	41

### Environmental Variables

The environmental variables analyzed for each school district included fiscal resources (FR), cost per pupil (CP), disadvantaged students (DS), minorities (MN), and school district size (SZ) as defined in Chapter 3. Environmental variable data for each school district is listed in Table 4.2.

Table 4.2

### Environmental Variables

(FR=Fiscal Resources; CP=Cost Per Pupil; DS=Disadvantaged Students; MN=Minorities; SZ=School District Size)

School	FR	CP	DS	MN	SZ
Alma	2.511	7210	27	006	358
Anselmo-Myrna	2.040	6616	29	001	286
Ashland Greenwood	4.425	6169	56	018	770
Axtell	1.902	6284	22	002	323
Bayard	3.338	7458	61	085	500
Bloomfield	2.702	8941	41	014	306
Centennial	3.861	7162	29	015	647
Central City	5.508	6741	24	024	812
Chappell	1.864	7488	35	006	258
Coleridge	1.504	8294	29	000	201
Conestoga	4.612	6664	18	021	678
Dodge	1.249	7146	33	013	171
Elkhorn Valley	2.886	6352	86	035	445
Exter	1.400	8142	25	002	206
Hartington	2.856	7085	30	010	349
Humphrey	1.929	9604	28	005	201
Lewisville	2.859	6789	10	021	476
Lyons-Decatur	2.756	6689	39	045	426
Mitchell	4.358	6009	50	139	641
Morrill	4.099	6924	54	115	489
Newcastle	1.249	7840	39	004	173
Niobrara	1.322	9538	64	060	157

North Loup Scotia	1.633	7064	57	016	230
Plamer	1.645	6568	34	007	257
Ponca	2.221	5422	16	002	430
Ravenna	2.979	6702	34	005	490
Red Cloud	2.244	7412	42	008	286
Sargent	1.860	8149	46	007	233
Scribner-Sydney	2.309	7820	27	010	307
Shickley	1.462	9408	23	001	159
Spencer-Naper	1.751	6954	43	004	270
St. Paul	4.011	6392	36	012	645
Stuart	4.384	7462	56	005	203
Sutherland	2.416	7252	35	021	385
Wilber-Clatonia	3.503	5962	20	019	587
Wilcox	1.679	8023	33	000	211
Winnebago	3.120	9520	85	413	422
Wisner-Pilger	3.438	6057	45	005	513

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Note. FR - Fiscal resources in millions of dollars

#### Organizational Health Survey Factors

The Survey of School District Organizational Health (Appendix B) was designed to measure teacher perceptions of different parts of the school district. The survey contained eight sub-scales or factors. The factors analyzed for each school district included student outcomes (LA), leadership (LD), organizational structure (OS), communication (CO), conflict management (CM), human resource management (HR), participation (PA), and creativity (CR) as defined in Chapter 3. The survey contained 10 questions for each factor. As a result of using a 5-point Likert scale each question received a score from 1 to 5. An average score for each factor was calculated for each survey returned and a district overall score was then calculated by averaging these scores. The scores for each district are listed in Table 4.3.

Table 4.3

**Organizational Health Survey Factors**

(LA = Student Outcomes; LD=Leadership; OS=Organizational Structure;  
CO=Communication; CM=Conflict Management; HR=Human Resource Management;  
PA=Participation; CR=Creativity; TS=Total Score)

School Name	LA	LD	OS	CO	CM	HR	PA	CR	TS
Alma	2.57	1.97	2.17	2.33	2.27	2.07	2.47	2.50	2.29
Anselmo-Myrna	2.97	1.83	2.63	2.63	2.33	2.47	2.67	2.63	2.52
Ashland Greenwood	3.20	3.42	3.42	3.26	2.74	3.16	3.44	3.20	3.23
Axtell	2.83	2.68	2.78	2.63	2.60	2.78	2.43	2.83	2.70
Bayard	3.30	3.33	3.33	2.83	2.67	3.23	3.27	2.97	3.12
Bloomfield	2.87	2.20	2.67	2.17	2.17	2.23	2.77	3.03	2.51
Centennial	3.07	2.93	3.23	3.20	3.00	3.23	3.27	3.30	3.15
Central City	2.43	2.13	2.50	2.70	1.97	2.50	2.87	2.73	2.48
Chappell	3.40	3.43	3.53	3.33	3.10	3.30	3.43	3.23	3.34
Coleridge	3.36	3.42	3.46	3.22	2.92	3.14	3.04	3.06	3.20
Conestoga	2.58	2.50	2.93	2.73	2.50	2.53	2.93	2.43	2.64
Dodge	3.20	3.00	3.20	2.90	2.73	2.93	3.27	2.97	3.03
Elkhorn Valley	2.83	2.70	2.53	2.43	2.63	2.57	2.63	2.73	2.63
Exter	2.83	2.68	2.60	2.38	2.60	2.63	2.70	2.73	2.64
Hartington	2.93	3.10	3.10	2.97	2.73	3.33	3.13	2.80	3.01
Humphrey	2.80	2.65	2.73	2.60	2.68	2.73	3.05	3.08	2.79
Lewisville	2.75	1.95	2.43	2.10	2.25	2.38	2.45	2.63	2.37
Lyons-Decatur	2.43	2.47	2.77	2.40	2.23	2.63	2.50	2.20	2.45
Mitchell	3.30	3.50	3.42	2.70	2.60	2.97	3.10	2.63	3.03
Morrill	3.06	2.88	2.78	2.92	2.74	2.64	3.14	2.96	2.89
Newcastle	2.60	2.37	2.27	2.65	2.00	2.47	2.77	2.30	2.43
Niobrara	3.38	3.18	3.33	2.93	2.58	3.25	3.25	3.20	3.14
North Loup Scotia	3.13	3.07	3.30	2.70	2.80	3.07	2.97	2.93	3.00
Plamer	3.38	3.45	3.45	3.18	2.90	3.30	3.43	3.23	3.29
Ponca	3.15	3.42	3.54	3.33	3.12	3.34	3.41	3.28	3.32
Ravenna	2.67	2.33	2.53	2.05	2.10	2.45	2.43	2.52	2.39
Red Cloud	2.80	2.18	2.78	2.85	2.45	2.73	3.01	2.98	2.72
Sargent	2.77	3.23	3.30	2.87	2.77	2.93	3.20	3.13	3.03
Scribner-Sydner	3.43	3.53	3.27	3.00	3.03	3.13	3.33	3.23	3.25
Shickley	3.23	3.30	3.10	2.77	2.80	2.90	3.07	2.80	3.00
Spencer-Naper	2.74	2.87	2.88	2.70	2.44	2.78	2.83	2.68	2.74
St. Paul	3.08	2.83	3.08	2.90	2.80	3.23	2.98	2.78	2.96
Stuart	2.63	2.33	2.78	2.23	2.20	2.13	2.19	2.63	2.39
Sutherland	3.27	3.23	2.80	2.93	2.70	3.10	2.97	3.03	3.00
Wilber-Clatonia	2.95	2.65	2.73	2.60	2.43	2.58	2.63	2.75	2.67
Wilcox	3.40	3.52	3.43	3.07	2.82	3.35	3.28	3.40	3.28
Winnebago	2.67	1.67	1.83	1.87	1.53	2.07	1.80	1.93	1.92
Wisner-Pilger	3.48	3.48	3.50	3.23	2.93	3.25	3.28	3.08	3.28

### School District Achievement Scores

Reading (RA) and math (MA) achievement scores were determined for each district using standardized test results as reported on the Nebraska State Report Card. For each achievement area in grades four, eight, and eleven the number of students who received scores in each quartile was divided by the total number of students in that grade. This number was then multiplied by a corresponding weighted factor for each quartile. The top quartile weighted factor was four and the number decreased by 1 for each of the next three quartiles. An average was then calculated from the resulting numbers and this number represented that particular grade levels score for that achievement area. These scores were then averaged to determine a total score for each achievement area for each district. For example, in a particular grade level if 3 students scored in the top quartile, 5 scored in the next, 5 in the next, and 3 in the last quartile, the average for the top quartile would be  $3/23 = 0.1875$ , the average for the next quartile would be  $5/23 = 0.3125$ , the average for the next quartile would be  $5/23 = 0.3125$ , and the average for the last quartile would be  $3/23 = 0.1875$ . The total score for this area in this grade level would then be  $(0.1875 \times 4) + (0.3125 \times 3) + (0.3125 \times 2) + (0.1875 \times 1) = 2.4928$ . The total scores from all three grade levels examined were then averaged for a final score for the district in that particular achievement area. The final achievement scores for each district are listed in Table 4.4.

Table 4.4

Reading (RA) and Math (MA) Achievement Scores

School Name	RA	MA
Alma	3.04	2.96
Anselmo-Myrna	2.84	3.10
Ashland Greenwood	2.88	2.98
Axtell	2.83	3.26
Bayard	2.65	2.30
Bloomfield	2.92	3.26
Centennial	2.70	2.92
Central City	2.92	2.95
Chappell	2.82	2.91
Coleridge	2.98	2.98
Conestoga	2.76	2.95
Dodge	2.53	2.77
Elkhorn Valley	2.42	2.73
Exter	2.80	3.00
Hartington	3.06	3.11
Humphrey	2.75	3.07
Lewisville	2.87	3.00
Lyons-Decatur	2.75	3.03
Mitchell	2.68	2.75
Morrill	2.76	2.85
Newcastle	3.04	2.14
Niobrara	2.76	3.17
North Loup Scotia	2.03	2.64
Plamer	2.92	3.05
Ponca	1.86	1.73
Ravenna	3.03	3.17
Red Cloud	2.62	3.06
Sargent	2.58	2.82
Scribner-Sydner	2.82	3.03
Shickley	1.96	1.98
Spencer-Naper	2.80	2.97
St. Paul	2.66	3.00
Stuart	3.23	3.38
Sutherland	2.99	2.72
Wilber-Clatonia	2.40	2.88
Wilcox	2.99	3.19
Winnebago	1.06	0.84
Wisner-Pilger	2.89	3.13

### Correlations

Table 4.5 presents the correlation matrix of organizational variables, environmental variables, math achievement, and reading achievement. Significant correlations are noted in the table.

**Table 4.5**

**Correlation Matrix of Organizational Variables, Environmental Variables, Math Achievement and Reading Achievement**

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1 (RA)	1.00									
X2 (MA)	.831	1.00								
X3 (SQ)	.056	.040	1.00							
X4 (PT)	.012	.099	.115	1.00						
X5 (PS)	-.021	-.019	.338*	.429**	1.00					
X6 (AT)	-.197	-.183	.298	.220	.696**	1.00				
X7 (SZ)	-.014	-.013	.359*	.469**	.786**	.777**	1.00			
X8 (MN)	-.634**	-.663**	-.132	-.049	.241	.449**	.188	1.00		
X9 (DS)	-.315	-.282	-.187	-.129	-.034	-.019	-.024	.577**	1.00	
X10 (FR)	-.008	-.004	.319	.393*	.808**	.808**	.963**	.266	.030	1.00

Note: \*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

The correlations listed in Table 4.5 indicate that none of the organizational or environmental factors except for minorities appear to be significantly related to gains or losses in achievement. The table also indicates that there are significant correlations between professional support and staff qualifications, professional support and pupil teacher ratios, administrative intensity and professional support, size and staff qualifications, size and pupil teacher ratio, size and professional support, size and administrative intensity, minorities and administrative intensity, disadvantaged students and minorities, fiscal resources and pupil teacher ratio, fiscal resources and professional support, fiscal resources and administrative intensity, and fiscal resources and size.



Table 4.6 presents the correlation matrix of the School District Organizational Health Survey, math achievement, and reading achievement. Significant correlations are noted in the table.

Table 4.6

**Correlation Matrix of the School District Organizational Health Survey, Math Achievement, and Reading Achievement**

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1 (RA)	1.00									
X2 (MA)	.831	1.00								
X3 (LA)	-.023	.019	1.00							
X4 (LD)	.063	.061	.816**	1.00						
X5 (OS)	.108	.213	.782**	.897**	1.00					
X6 (CO)	.141	.113	.704**	.795**	.831**	1.00				
X7 (CM)	.157	.265	.671**	.774**	.771**	.684**	1.00			
X8 (HR)	-.250	-.218	.758**	.775**	.737**	.744**	.580**	1.00		
X9 (PA)	.046	.121	.688**	.774**	.829**	.812**	.694**	.655**	1.00	
X10 (CR)	.211	.329*	.721**	.704**	.764**	.757**	.728**	.571**	.765**	1.00

Note: \*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

The correlations listed in Table 4.6 indicated that for the most part none of the factors measured by the organizational health survey appear to be related to gains or losses in achievement. The reader will note that there is a significant correlation between math achievement and creativity, but given the high correlations of all the items on the survey, one must take into consideration the probability that the instrument is measuring the same thing. It is a problem that everything on the instrument is correlated with everything on the instrument. Before looking at regression models, it would be safe to say that there appeared to be no particular relationship between leadership and student achievement. Nor did levels of conflict appear significantly related although the math score was more correlated (not significantly) than the reading score.

### Regression Models

In order to more closely replicate Bidwell and Kasarda's 1975 study, ten regression models were computed in order to explain variation in school district math and reading achievement. The ten regression models are summarized in the tables that follow.

The first model, presented in Table 4.7, captured variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources. The model achieved significance ( $f=5.816$ ,  $p .001$ ) and explained 47.6% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities,  $t = -4.375$ ,  $p .000$ ). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.375$  for each unit gain in reading achievement.

Table 4.7

#### Model 1 – Environmental Variables and their Correlation with RA

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.690 <sup>a</sup>	.476	.394	.31225

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.835	5	.567	5.816	.001 <sup>a</sup>
	Residual	3.120	32	.097		
	Total	5.955	37			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.621	.650		4.033	.000
	FR Fiscal Resources in Millions of thousands dollars	3.554E-04	.000	.970	1.747	.090
	CP Cost Per Pupil in thousands of dollars	-1.39E-05	.000	-.037	-.187	.853
	DS Disadvantage Students (percent)	2.187E-03	.004	.093	.583	.564
	MN Number of Minorities	-4.44E-03	.001	-.782	-4.375	.000
	SIZE School Size	-1.81E-03	.001	-.819	-1.347	.187

a. Dependent Variable: RA Reading Achievement

The second model, presented in Table 4.8, captured variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources. The model achieved significance ( $f=7.590$ ,  $p .001$ ) and explained 54.3% of the variation in Math Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities,  $t = -1.678$ ,  $p .000$ ). Holding the other independent variables constant, the number of minorities in a school district had the

effect of depressing the slope of the regression line by  $-5.77$  for each unit gain in math achievement.

Table 4.8

**Model 2 – Environmental Variables and their Correlation with MA**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 <sup>a</sup>	.543	.471	.34744

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.581	5	.916	7.590	.000 <sup>a</sup>
	Residual	3.863	32	.121		
	Total	8.444	37			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.791	.723		.001
	FR Fiscal Resources in Millions of thousands dollars	4.811E-04	.000	1.102	.041
	CP Cost Per Pupil in thousands of dollars	-3.44E-05	.000	-.076	.680
	DS Disadvantage Students (percent)	4.718E-03	.004	.169	.267
	MN Number of Minorities	-5.77E-03	.001	-.855	.000
	SIZE School Size	-2.51E-03	.001	-.954	.103

a. Dependent Variable: MA Mathematics Achievement

The third model, presented in Table 4.9, attempted to capture variation in the dependent variable Reading Achievement as explained by the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, and professional support, but failed to achieve significance ( $f = .653$ ,  $p = .629$ ).

Table 4.9

**Model 3 – Organizational Variables and their Correlation with RA**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271 <sup>a</sup>	.073	-.039	.40894

a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.437	4	.109	.653	.629 <sup>a</sup>
	Residual	5.519	33	.167		
	Total	5.955	37			

a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)

b. Dependent Variable: RA Reading Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.910	.357		8.157	.000
	PT Pupil to teacher ratio	-7.90E-04	.025	-.006	-.031	.975
	AT Administrative Intensity (Raw FTE)	-.177	.114	-.367	-1.552	.130
	PS Professional Sport (FTE)	9.283E-02	.118	.204	.787	.437
	SQ Staff Qualification (% of teachers with a Master's degree)	2.971E-03	.005	.097	.542	.591

a. Dependent Variable: RA Reading Achievement

The fourth model, presented in Table 4.10, attempted to capture variation in the dependent variable Math Achievement as explained by the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, and professional support, but failed to achieve significance ( $f = .617$ ,  $p = .653$ ).

Table 4.10

**Model 4 – Organizational Variables and their Correlation with MA**

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.264 <sup>a</sup>	.070	-.043	.48792	
a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)					

ANOVA <sup>b</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.588	4	.147	.617	.653 <sup>a</sup>
	Residual	7.856	33	.238		
	Total	8.444	37			
a. Predictors: (Constant), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, AT Administrative Intensity (Raw FTE), PS Professional Sport (FTE)						
b. Dependent Variable: MA Mathematics Achievement						

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.886	.426		6.781	.000
	PT Pupil to teacher ratio	1.665E-02	.030	.103	.548	.587
	AT Administrative Intensity (Raw FTE)	-.186	.136	-.323	-1.363	.182
	PS Professional Sport (FTE)	7.319E-02	.141	.135	.520	.606
	SQ Staff Qualification (% of teachers with a Master's degree)	2.866E-03	.007	.079	.439	.664
a. Dependent Variable: MA Mathematics Achievement						

The fifth model, presented in Table 4.11, attempted to capture variation in the dependent variable Reading Achievement as explained by the Survey of School District

Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure. Initially, the model achieved significance ( $f = 2.275$ ,  $p .05$ ) and explained 38.6% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Human Resource Management,  $t = -3.318$ ,  $p .002$ ). Holding the other independent variables constant, Human Resource Management appeared to have the effect of depressing the slope of the regression line by  $-3.318$  for each unit gain in reading achievement. However, upon closer examination it was noticed that when the p-value for the model was taken out several more decimal places it equaled 0.05028. In order to have an overall significant model the p-value would have needed to be less than or equal to 0.05. Since the actual p-value was slightly larger than 0.05 the model failed to achieve significance ( $f = .05028$ ,  $p .2.275$ ).

Table 4.11

**Model 5 –Survey Variables and their Correlation with RA****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.621 <sup>a</sup>	.386	.216	.3552

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure



**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.296	8	.287	2.275	.050 <sup>a</sup>
	Residual	3.659	29	.126		
	Total	5.955	37			

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

b. Dependent Variable: Reading Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.960	.734		4.032	.000
	Learning Outcomes	-.9.08E-02	.379	-.069	-.239	.813
	Leadership	.179	.290	.242	.616	.543
	Organizational Structure	.178	.376	.189	.474	.639
	Communication	.592	.341	.547	1.735	.093
	Conflict Management	8.028E-02	.293	.070	.274	.786
	Human Resource Management	-.958	.289	-.883	-3.318	.002
	Participation	-.353	.283	-.368	-1.249	.222
	Creativity	.324	.342	.266	.950	.350

a. Dependent Variable: Reading Achievement

The sixth model, presented in Table 4.12, captured variation in the dependent variable Math Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure. The model achieved significance ( $f=3.311$ ,  $p .008$ ) and explained 47.7% of the variation in Math Achievement. Additionally, two independent variables contributed significantly to the model (Organizational Structure,  $t = 2.066$ ,  $p .048$ , and Human Resource Management,  $t = -2.828$ ,  $p .008$ ). This indicated a suppression effect. "Suppression occurs when either the absolute value of a predictor's beta weight is

greater than its Pearson correlation with the criterion or when the two have different signs. This situation refers to the latter. Specifically, suppression refers to finding that the relation of an independent variable to a dependent variable (math achievement) when corrected for its intercorrelation with other predictors is quite different from that suggested by its simple correlation with the criterion. With this model consider the correlation and beta weights (standardized beta weights in output). Recall the association between organizational structure and math achievement was  $r = .213$  (non significant when tested at  $\alpha = .05$ ) and the association between human resource management and math achievement was  $r = -.218$ . When the associations between all of the variables are controlled for (removing or partialing out the effect/association of other variables in the model) in multiple regression analysis, however, both variables have nonzero beta weights (Beta for human resource management =  $-.694$ , Beta for organizational structure =  $.761$ ). These beta weights suggested that adjustment is even a better predictor/explanation of math achievement when we are controlling for all other variables in the model to look at the weight human resource management has on math achievement. This demonstrated that correlations of zero or near zero (non-significant) can mask/hide predictive relations or explanations once other variables in the model are controlled" (Tolland, 2002). Essentially, the other variables in the model suppressed the true predictive power or explanation that organizational structure and human resource management independently had on math achievement.

Table 4.12

**Model 6 –Survey Variables and their Correlation with MA****Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691 <sup>a</sup>	.477	.333	.3901

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.031	8	.504	3.311	.008 <sup>a</sup>
	Residual	4.413	29	.152		
	Total	8.444	37			

a. Predictors: (Constant), Creativity, Human Resource Management, Conflict Management, Participation, Learning Outcomes, Communication, Leadership, Organizational Structure

b. Dependent Variable: Mathematics Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.273	.806		2.819	.009
	Learning Outcomes	-.205	.416	-.132	-.492	.627
	Leadership	-.267	.318	-.304	-.839	.408
	Organizational Structure	.853	.413	.761	2.066	.048
	Communication	7.861E-02	.375	.061	.210	.835
	Conflict Management	.306	.322	.223	.949	.350
	Human Resource Management	-.896	.317	-.694	-2.828	.008
	Participation	-.335	.310	-.293	-1.078	.290
	Creativity	.684	.375	.470	1.824	.078

a. Dependent Variable: Mathematics Achievement

The seventh model, presented in Table 4.13, captured variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of

district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support and the variable of leadership. The model achieved significance ( $f=2.632$ ,  $p .022$ ) and explained 49.4% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities,  $t = -3.575$ ,  $p .001$ ). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-3.575$  for each unit gain in reading achievement. The simple correlation that we saw earlier between reading achievement and minorities closely resembled the relationship between these two variables.

Table 4.13

**Model 7 – Environmental, Organizational and Leadership Variables and their Correlation with RA**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.703 <sup>a</sup>	.494	.306	.3342

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.940	10	.294	2.632	.022 <sup>a</sup>
	Residual	3.016	27	.112		
	Total	5.955	37			

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

b. Dependent Variable: Reading Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.118	.937		3.329	.003
	Fiscal Resources in Millions of thousands dollars	3.090E-04	.000	.843	1.368	.183
	Cost Per Pupil in thousands of dollars	-3.72E-05	.000	-.098	-.408	.687
	Disadvantage Students (percent)	3.000E-03	.005	.128	.648	.522
	Number of Minorities	-4.83E-03	.001	-.851	-3.575	.001
	School Size	-1.81E-03	.002	-.815	-1.169	.253
	Pupil to teacher ratio	-9.05E-03	.024	-.066	-.370	.714
	Administrative Intensity (Raw FTE)	3.145E-02	.151	.065	.208	.837
	Professional Sport (FTE)	5.660E-02	.118	.124	.481	.635
	Staff Qualification (% of teachers with a Master's degree)	-2.48E-03	.005	-.081	-.521	.606
	Leadership	-7.30E-02	.110	-.099	-.665	.511

a. Dependent Variable: Reading Achievement

The eighth model, presented in Table 4.14, captured variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio,

administrative intensity, professional support and the variable of leadership. The model achieved significance ( $f=3.819$ ,  $p .003$ ) and explained 58.6% of the variation in Math Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities,  $t = -4.865$ ,  $p .000$ ). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.865$  for each unit gain in math achievement. The simple correlation that we saw earlier between math achievement and minorities closely resembled the relationship between these two variables.

Table 4.14

**Model 8 – Environmental, Organizational and Leadership Variables and their Correlation with MA**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.765 <sup>a</sup>	.586	.432	.3599

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.947	10	.495	3.819	.003 <sup>a</sup>
	Residual	3.498	27	.130		
	Total	8.444	37			

a. Predictors: (Constant), Leadership, Disadvantage Students (percent), Professional Sport (FTE), Cost Per Pupil in thousands of dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Number of Minorities, Administrative Intensity (Raw FTE), Fiscal Resources in Millions of thousands dollars, School Size

b. Dependent Variable: Mathematics Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.081	1.009		3.055	.005
	Fiscal Resources in Millions of thousands dollars	4.081E-04	.000	.935	1.677	.105
	Cost Per Pupil in thousands of dollars	-6.13E-05	.000	-.136	-.623	.538
	Disadvantage Students (percent)	8.095E-03	.005	.289	1.623	.116
	Number of Minorities	-7.07E-03	.001	-1.047	-4.865	.000
	School Size	-3.00E-03	.002	-1.137	-1.802	.083
	Pupil to teacher ratio	1.334E-02	.026	.082	.507	.616
	Administrative Intensity (Raw FTE)	.182	.163	.317	1.118	.274
	Professional Sport (FTE)	5.987E-02	.127	.110	.472	.641
	Staff Qualification (% of teachers with a Master's degree)	-3.67E-03	.005	-.101	-.716	.480
	Leadership	-.136	.118	-.155	-1.153	.259

a. Dependent Variable: Mathematics Achievement

The ninth model, presented in Table 4.15, captured variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio,

administrative intensity, professional support and the variable of conflict management. The model achieved significance ( $f=2.811$ ,  $p .016$ ) and explained 51% of the variation in Reading Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities,  $t = -3.731$ ,  $p .001$ ). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-3.731$  for each unit gain in reading achievement. The simple correlation that we saw earlier between reading achievement and minorities closely resembled the relationship between these two variables.

Table 4.15

**Model 9 – Environmental, Organizational and Conflict Management Variables and their Correlation with RA**

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Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.714 <sup>a</sup>	.510	.329	.32873

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a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars



**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.037	10	.304	2.811	.016 <sup>a</sup>
	Residual	2.918	27	.108		
	Total	5.955	37			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.420	.973		3.516	.002
	FR Fiscal Resources in Millions of thousands dollars	3.056E-04	.000	.834	1.378	.180
	CP Cost Per Pupil in thousands of dollars	-3.96E-05	.000	-.105	-.442	.662
	DS Disadvantage Students (percent)	3.306E-03	.005	.141	.734	.469
	MN Number of Minorities	-5.33E-03	.001	-.939	-3.731	.001
	PT Pupil to teacher ratio	-1.97E-03	.025	-.014	-.079	.938
	AT Administrative Intensity (Raw FTE)	6.540E-02	.153	.135	.428	.672
	PS Professional Sport (FTE)	3.735E-02	.116	.082	.321	.751
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.15E-03	.005	-.070	-.459	.650
	CM Conflict Management	-.230	.197	-.200	-1.167	.253
	SIZE School Size	-1.87E-03	.002	-.847	-1.233	.228

a. Dependent Variable: RA Reading Achievement

The tenth model, presented in Table 4.16, captured variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of

district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources; the organizational variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support and the variable of conflict management. The model achieved significance ( $f=3.666$ ,  $p .033$ ) and explained 57.6% of the variation in Math Achievement. Additionally, one independent variable contributed significantly to the model (Number of Minorities,  $t = -4.523$ ,  $p .000$ ). Holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.523$  for each unit gain in math achievement. The simple correlation that we saw earlier between reading achievement and minorities closely resembled the relationship between these two variables.

Table 4.16

**Model 10 – Environmental, Organizational and Conflict Management Variables and their Correlation with MA**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759 <sup>a</sup>	.576	.419	.36420

a. Predictors: (Constant), CM Conflict Management, SIZE School Size, DS Disadvantage Students (percent), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.863	10	.486	3.666	.003 <sup>a</sup>
	Residual	3.581	27	.133		
	Total	8.444	37			

a. Predictors: (Constant), CM Conflict Management, SIZE School Size, DS Disadvantage Students (percent), SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.098	1.078		2.874	.008
	FR Fiscal Resources in Millions of thousands dollars	4.195E-04	.000	.961	1.707	.099
	CP Cost Per Pupil in thousands of dollars	-5.69E-05	.000	-.127	-.573	.571
	DS Disadvantage Students (percent)	7.496E-03	.005	.268	1.502	.145
	MN Number of Minorities	-7.15E-03	.002	-1.059	-4.523	.000
	SIZE School Size	-2.99E-03	.002	-1.134	-1.774	.087
	PT Pupil to teacher ratio	1.714E-02	.028	.106	.618	.542
	AT Administrative Intensity (Raw FTE)	.182	.169	.317	1.076	.291
	PS Professional Sport (FTE)	4.014E-02	.129	.074	.311	.758
	SQ Staff Qualification (% of teachers with a Master's degree)	-3.46E-03	.005	-.095	-.664	.512
	CM Conflict Management	-.178	.218	-.130	-.817	.421

a. Dependent Variable: MA Mathematics Achievement

The next model, presented in Table 4.17, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and

beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Reading Achievement. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.972) found beneath the column for Sig. F Change in row 2 to  $\alpha = .05$ ). The results also indicated that Model 3 did not account for significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.321) found beneath the column for Sig. F Change in row 3 to  $\alpha = .05$ ). Each of the models achieved significance (model one  $f = 5.816$ ,  $p = .001$ ; model 2  $f = 2.934$ ,  $p = .014$ ; model 3  $f = 2.745$ ,  $p = .018$ ). Model 1 explained 47.6% of the variance, Model 2 explained 48.5% of the variance, and Model 3 explained 50.4% of the variance in Reading Achievement. Additionally, one independent variable contributed significantly to each of the models (Number of Minorities,  $t = -4.523$ ,  $p = .001$ ). In Model 1, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.375$  for each unit gain in reading achievement. In Model 2, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-3.581$  for each unit gain in reading achievement. In Model 3, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-3.673$  for each unit gain in reading achievement. Interestingly enough, adding the organizational and total score

variables did not significantly change the amount of variation (59.55%) explained in reading achievement in either Model 2 or Model 3.

Table 4.17

**Regression Results A for Reading Achievement**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.690 <sup>a</sup>	.476	.394	.3122	.476	5.816	5	32	.001
2	.697 <sup>b</sup>	.485	.320	.3309	.009	.126	4	28	.972
3	.710 <sup>c</sup>	.504	.320	.3307	.019	1.022	1	27	.321

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

**ANOVA<sup>d</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.835	5	.567	5.816	.001 <sup>a</sup>
	Residual	3.120	32	9.750E-02		
	Total	5.955	37			
2	Regression	2.890	9	.321	2.934	.014 <sup>b</sup>
	Residual	3.065	28	.109		
	Total	5.955	37			
3	Regression	3.002	10	.300	2.745	.018 <sup>c</sup>
	Residual	2.953	27	.109		
	Total	5.955	37			

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

d. Dependent Variable: Reading Achievement

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.621	.650		4.033	.000
	Fiscal Resources in Millions of thousands dollars	3.554E-04	.000	.970	1.747	.090
	Cost Per Pupil in thousands of dollars	-1.39E-05	.000	-.037	-.187	.853
	Disadvantage Students (percent)	2.187E-03	.004	.093	.583	.564
	Number of Minorities	-4.44E-03	.001	-.782	-4.375	.000
	School Size	-1.81E-03	.001	-.819	-1.347	.187
2	(Constant)	2.919	.879		3.322	.002
	Fiscal Resources in Millions of thousands dollars	3.218E-04	.000	.878	1.444	.160
	Cost Per Pupil in thousands of dollars	-3.15E-05	.000	-.083	-.351	.729
	Disadvantage Students (percent)	2.234E-03	.004	.095	.503	.619
	Number of Minorities	-4.55E-03	.001	-.801	-3.581	.001
	School Size	-1.75E-03	.002	-.790	-1.146	.261
	Pupil to teacher ratio	-1.06E-02	.024	-.078	-.440	.664
	Administrative Intensity (Raw FTE)	7.429E-03	.146	.015	.051	.960
	Professional Sport (FTE)	5.220E-02	.116	.114	.449	.657
	Staff Qualification (% of teachers with a Master's degree)	-2.52E-03	.005	-.082	-.534	.597
3	(Constant)	3.387	.993		3.412	.002
	Fiscal Resources in Millions of thousands dollars	3.108E-04	.000	.848	1.394	.175
	Cost Per Pupil in thousands of dollars	-3.98E-05	.000	-.105	-.441	.663
	Disadvantage Students (percent)	3.421E-03	.005	.146	.745	.463
	Number of Minorities	-5.15E-03	.001	-.907	-3.673	.001
	School Size	-1.89E-03	.002	-.852	-1.232	.229
	Pupil to teacher ratio	-7.68E-03	.024	-.056	-.316	.754
	Administrative Intensity (Raw FTE)	5.778E-02	.154	.120	.376	.710
	Professional Sport (FTE)	5.172E-02	.116	.113	.445	.660
	Staff Qualification (% of teachers with a Master's degree)	-2.59E-03	.005	-.085	-.550	.587
	Total Score	-.178	.176	-.157	-1.011	.321

a. Dependent Variable: Reading Achievement

**Excluded Variables<sup>f</sup>**

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Pupil to teacher ratio	-.047 <sup>a</sup>	-.296	.769	-.053	.662
	Administrative Intensity (Raw FTE)	.007 <sup>a</sup>	.026	.980	.005	.209
	Professional Sport (FTE)	.065 <sup>a</sup>	.282	.780	.051	.317
	Staff Qualification (% of teachers with a Master's degree)	-.066 <sup>a</sup>	-.460	.649	-.082	.815
	Total Score	-.143 <sup>a</sup>	-1.032	.310	-.182	.857
2	Total Score	-.157 <sup>b</sup>	-1.011	.321	-.191	.762

a. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Dependent Variable: Reading Achievement

Notes for these results:

Model 1 = Reduced Model 1 = Reading achievement regressed on the environmental variables

Model 2 = Reduced Model 2 = Reading achievement regressed on the environmental & organizational variables

Model 3 = Full Model = Reading achievement regressed on the environmental, organizational, & total score variables

The next model, presented in Table 4.18, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Math Achievement. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.829) found beneath the column for Sig. F Change in row 2 to  $\alpha = .05$ ). The results also indicated that Model 3 did not account for



significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.257) found beneath the column for Sig. F Change in row 3 to  $\alpha = .05$ ). Each of the models achieved significance (model one  $f = 7.590$ ,  $p = .000$ ; model 2  $f = 4.048$ ,  $p = .002$ ; model 3  $f = 3.821$ ,  $p = .003$ ). Model 1 explained 54.3% of the variance, Model 2 explained 56.5% of the variance, and Model 3 explained 58.6% of the variance in Math Achievement. Additionally, two independent variables contributed significantly (Model 1: Fiscal Resources,  $t = 2.126$ ,  $p = .041$ ; Number of Minorities,  $t = -5.119$ ,  $p = .000$ ; Model 2: Number of Minorities,  $t = -4.714$ ,  $p = .000$ ; Model 3 Number of Minorities,  $t = -4.786$ ,  $p = .000$ ). In Model 1, holding the other independent variables constant, the Fiscal Resources of the district had the effect of increasing the slope of the regression line by 2.126 for each unit gain in math achievement. Also, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.375$  for each unit gain in math achievement. In Model 2, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.714$  for each unit gain in reading achievement. In Model 3, holding the other independent variables constant, the number of minorities in a school district had the effect of depressing the slope of the regression line by  $-4.786$  for each unit gain in math achievement. The reason that fiscal resources may not have contributed to the Models 2 and Model 3 was that there may have been a spurious effect going on. That is, because the regression weight of fiscal resources on math achievement in Model 1 disappeared when we added the organizational variables and then controlled for these and the other four environmental variables, the fiscal resources weight may be a spurious one. Interestingly enough, adding the organizational and total score variables did not

significantly change the amount of variation (84.4%) explained in math achievement in either Model 2 or Model 3.

Table 4.18

Regression Results B for Math Achievement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.737 <sup>a</sup>	.543	.471	.3474	.543	7.590	5	32	.000
2	.752 <sup>b</sup>	.565	.426	.3620	.023	.368	4	28	.829
3	.765 <sup>c</sup>	.586	.433	.3599	.021	1.339	1	27	.257

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

**ANOVA<sup>d</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.581	5	.916	7.590	.000 <sup>a</sup>
	Residual	3.863	32	.121		
	Total	8.444	37			
2	Regression	4.774	9	.530	4.048	.002 <sup>b</sup>
	Residual	3.670	28	.131		
	Total	8.444	37			
3	Regression	4.948	10	.495	3.821	.003 <sup>c</sup>
	Residual	3.496	27	.129		
	Total	8.444	37			

a. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Predictors: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE), Total Score

d. Dependent Variable: Mathematics Achievement

Coefficients <sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.791	.723		3.860	.001
	Fiscal Resources in Millions of thousands dollars	4.811E-04	.000	1.102	2.126	.041
	Cost Per Pupil in thousands of dollars	-3.44E-05	.000	-.076	-.417	.680
	Disadvantage Students (percent)	4.718E-03	.004	.169	1.130	.267
	Number of Minorities	-5.77E-03	.001	-.855	-5.119	.000
	School Size	-2.51E-03	.001	-.954	-1.678	.103
2	(Constant)	2.709	.961		2.818	.009
	Fiscal Resources in Millions of thousands dollars	4.320E-04	.000	.990	1.772	.087
	Cost Per Pupil in thousands of dollars	-5.07E-05	.000	-.113	-.515	.611
	Disadvantage Students (percent)	6.665E-03	.005	.238	1.372	.181
	Number of Minorities	-6.55E-03	.001	-.969	-4.714	.000
	School Size	-2.89E-03	.002	-1.097	-1.731	.094
	Pupil to teacher ratio	1.046E-02	.026	.065	.397	.695
	Administrative Intensity (Raw FTE)	.137	.159	.239	.863	.396
	Professional Sport (FTE)	5.166E-02	.127	.095	.406	.688
	Staff Qualification (% of teachers with a Master's degree)	-3.74E-03	.005	-.103	-.725	.475
3	(Constant)	3.292	1.080		3.048	.005
	Fiscal Resources in Millions of thousands dollars	4.183E-04	.000	.958	1.724	.096
	Cost Per Pupil in thousands of dollars	-6.10E-05	.000	-.136	-.621	.540
	Disadvantage Students (percent)	8.144E-03	.005	.291	1.630	.115
	Number of Minorities	-7.30E-03	.002	-1.080	-4.786	.000
	School Size	-3.06E-03	.002	-1.162	-1.838	.077
	Pupil to teacher ratio	1.409E-02	.026	.087	.534	.598
	Administrative Intensity (Raw FTE)	.200	.167	.348	1.196	.242
	Professional Sport (FTE)	5.106E-02	.127	.094	.403	.690
	Staff Qualification (% of teachers with a Master's degree)	-3.83E-03	.005	-.105	-.747	.461
	Total Score	-.221	.191	-.164	-1.157	.257

a. Dependent Variable: Mathematics Achievement

### Excluded Variables<sup>f</sup>

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Pupil to teacher ratio	.077 <sup>a</sup>	.516	.609	.092	.662
	Administrative Intensity (Raw FTE)	.193 <sup>a</sup>	.732	.470	.130	.209
	Professional Sport (FTE)	.097 <sup>a</sup>	.451	.655	.081	.317
	Staff Qualification (% of teachers with a Master's degree)	-.084 <sup>a</sup>	-.629	.534	-.112	.815
	Total Score	-.106 <sup>a</sup>	-.813	.422	-.145	.857
2	Total Score	-.164 <sup>b</sup>	-1.157	.257	-.217	.762

a. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars

b. Predictors in the Model: (Constant), School Size, Disadvantage Students (percent), Cost Per Pupil in thousands of dollars, Number of Minorities, Fiscal Resources in Millions of thousands dollars, Staff Qualification (% of teachers with a Master's degree), Pupil to teacher ratio, Professional Sport (FTE), Administrative Intensity (Raw FTE)

c. Dependent Variable: Mathematics Achievement

Notes for these results:

Model 1 = Reduced Model 1 = Math achievement regressed on the environmental variables

Model 2 = Reduced Model 2 = Math achievement regressed on the environmental & organizational variables

Model 3 = Full Model = Math achievement regressed on the environmental, organizational, & total score variables

### Removal of Significant Variables

As a result of finding that the number of minorities variable was the main contributing factor in the majority of models the researcher performed further analysis. It was noted that one school in the sample population appeared to be an outlier due to its high number of minorities when compared to the rest of the schools in the study. The number of minorities data from this district was removed and additional regression models were computed on all models that had originally been found to be significant. The models are summarized in the tables that follow.

The first model, presented in Table 4.19, attempted to capture variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources with outlier district data removed, but failed to achieve significance ( $f = .336$ ,  $p = .852$ ).

Table 4.19

Variation in Reading Achievement as Explained by the Environmental Variables with the Outlier District Data Removed

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.201 <sup>a</sup>	.040	-.080	.30945

a. Predictors: (Constant), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, DS Disadvantage Students (percent), FR Fiscal Resources in Millions of thousands dollars

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.129	4	.032	.336	.852 <sup>a</sup>
	Residual	3.064	32	.096		
	Total	3.193	36			

a. Predictors: (Constant), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, DS Disadvantage Students (percent), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.194	.549		3.998
	FR Fiscal Resources in Millions of thousands dollars	6.137E-05	.000	.228	.992
	CP Cost Per Pupil in thousands of dollars	5.289E-05	.000	.179	.888
	DS Disadvantage Students (percent)	1.095E-03	.004	.057	.778
	MN Number of Minorities	-1.58E-03	.002	-.166	.465

a. Dependent Variable: RA Reading Achievement

The second model, presented in Table 4.20, attempted to capture variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources with the outlier district data removed, but failed to achieve significance ( $f = .876$ ,  $p = .509$ ).

Table 4.20

The Variation in Math Achievement as Explained by the Environmental Variables with the Outlier District Data Removed

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.352 <sup>a</sup>	.124	-.018	.35070

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.538	5	.108	.876	.509 <sup>a</sup>
	Residual	3.813	31	.123		
	Total	4.351	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.714	.740		3.668	.001
	FR Fiscal Resources in Millions of thousands dollars	4.120E-04	.000	1.311	1.631	.113
	CP Cost Per Pupil in thousands of dollars	-1.86E-05	.000	-.054	-.214	.832
	DS Disadvantage Students (percent)	4.019E-03	.004	.178	.923	.363
	MN Number of Minorities	-4.33E-03	.003	-.388	-1.708	.098
	SIZE School Size	-2.15E-03	.002	-1.133	-1.326	.194

a. Dependent Variable: MA Mathematics Achievement

The third model, presented in Table 4.21, attempted to capture variation in the dependent variable Math Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure with the outlier district data removed, but failed to achieve significance ( $f = 1.57$ ,  $p = .179$ ).

Table 4.21

The Variation in Math Achievement as Explained by the Survey of School District Organizational Health Variables with the Outlier District Data Removed



**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.556 <sup>a</sup>	.310	.112	.32754

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.347	8	.168	1.570	.179 <sup>a</sup>
	Residual	3.004	28	.107		
	Total	4.351	36			

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

b. Dependent Variable: MA Mathematics Achievement

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.815	.693		4.061	.000
	LA Learning Outcomes	3.628E-02	.356	.032	.102	.920
	LD Leadership	-.438	.272	-.651	-1.615	.118
	OS Organizational Structure	.564	.356	.631	1.585	.124
	CO Communication	-.304	.332	-.302	-.916	.367
	CM Conflict Management	-8.31E-02	.291	-.072	-.286	.777
	HR Human Resource Management	.207	.404	.222	.512	.613
	PA Participation	-.544	.267	-.588	-2.037	.051
	CR Creativity	.568	.317	.480	1.793	.084

a. Dependent Variable: MA Mathematics Achievement

The fourth model, presented in Table 4.22, attempted to capture variation in the dependent variable Reading Achievement as explained by the Survey of School District Organizational Health (predictor) variables of creativity, human resource management, conflict management, participation, learning outcomes, communication, leadership, and organizational structure with the outlier district data removed, but failed to achieve significance ( $f = 1.278$ ,  $p .294$ ).

Table 4.22

**The Variation in Reading Achievement as Explained by the Survey of Organizational Health Variables with Outlier District Data Removed**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517 <sup>a</sup>	.267	.058	.28903

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.854	8	.107	1.278	.294 <sup>a</sup>
	Residual	2.339	28	.084		
	Total	3.193	36			

a. Predictors: (Constant), CR Creativity, CM Conflict Management, PA Participation, LA Learning Outcomes, CO Communication, LD Leadership, OS Organizational Structure, HR Human Resource Management

b. Dependent Variable: RA Reading Achievement

Coefficients <sup>a</sup>					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	3.484	.612		5.696
	LA Learning Outcomes	.143	.314	.147	.454
	LD Leadership	1.308E-02	.240	.023	.055
	OS Organizational Structure	-.101	.314	-.132	-.323
	CO Communication	.222	.293	.257	.756
	CM Conflict Management	-.296	.257	-.301	-1.153
	HR Human Resource Management	.110	.357	.138	.308
	PA Participation	-.555	.236	-.701	-2.357
	CR Creativity	.212	.279	.209	.758

a. Dependent Variable: RA Reading Achievement

The fifth model, presented in Table 4.23, attempted to capture variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of leadership with the outlier district data removed, but failed to achieve significance ( $f = .335$ ,  $p = .963$ ).

Table 4.23

**The Variation in Reading Achievement as Explained by the Environmental, Organizational, and Leadership, Variables with the Outlier District Data Removed**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.338 <sup>a</sup>	.114	-.227	.32985

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.364	10	.036	.335	.963 <sup>a</sup>
	Residual	2.829	26	.109		
	Total	3.193	36			

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

b. Dependent Variable: RA Reading Achievement

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.060	.926		3.306	.003
	FR Fiscal Resources in Millions of thousands dollars	1.693E-04	.000	.629	.685	.499
	CP Cost Per Pupil in thousands of dollars	3.123E-06	.000	.011	.033	.974
	DS Disadvantage Students (percent)	1.239E-03	.005	.064	.260	.797
	MN Number of Minorities	-1.47E-03	.003	-.154	-.509	.615
	SIZE School Size	-9.29E-04	.002	-.572	-.558	.582
	PT Pupil to teacher ratio	-8.77E-03	.024	-.087	-.364	.719
	AT Administrative Intensity (Raw FTE)	-1.30E-02	.153	-.035	-.085	.933
	PS Professional Sport (FTE)	4.533E-02	.117	.135	.389	.700
	SQ Staff Qualification (% of teachers with a Master's degree)	-4.06E-04	.005	-.018	-.082	.935
	LD Leadership	-.125	.115	-.216	-1.081	.290

a. Dependent Variable: RA Reading Achievement

The sixth model, presented in Table 4.24, attempted to capture variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of leadership with the outlier district data removed, but failed to achieve significance ( $f = .684$ ,  $p = .730$ ).

Table 4.24

**The Variation in Math Achievement as Explained by the Environmental, Organizational, and Leadership, Variables with the Outlier District Data Removed**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.456 <sup>a</sup>	.208	-.096	.36402

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.906	10	.091	.684	.730 <sup>a</sup>
	Residual	3.445	26	.133		
	Total	4.351	36			

a. Predictors: (Constant), LD Leadership, AT Administrative Intensity (Raw FTE), DS Disadvantage Students (percent), PT Pupil to teacher ratio, SQ Staff Qualification (% of teachers with a Master's degree), CP Cost Per Pupil in thousands of dollars, MN Number of Minorities, PS Professional Sport (FTE), FR Fiscal Resources in Millions of thousands dollars, SIZE School Size

b. Dependent Variable: MA Mathematics Achievement

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.050	1.021		2.986	.006
	FR Fiscal Resources in Millions of thousands dollars	3.342E-04	.000	1.064	1.225	.231
	CP Cost Per Pupil in thousands of dollars	-4.00E-05	.000	-.116	-.380	.707
	DS Disadvantage Students (percent)	7.164E-03	.005	.318	1.363	.185
	MN Number of Minorities	-5.30E-03	.003	-.476	-1.662	.108
	SIZE School Size	-2.53E-03	.002	-1.337	-1.379	.180
	PT Pupil to teacher ratio	1.349E-02	.027	.115	.506	.617
	AT Administrative Intensity (Raw FTE)	.159	.169	.368	.939	.356
	PS Professional Sport (FTE)	5.391E-02	.129	.137	.419	.678
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.57E-03	.005	-.098	-.470	.642
	LD Leadership	-.164	.127	-.243	-1.286	.210

a. Dependent Variable: MA Mathematics Achievement

The seventh model, presented in Table 4.25, attempted to capture variation in the dependent variable Reading Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of conflict management with the outlier district data removed, but failed to achieve significance ( $f = .415$ ,  $p = .926$ ).

Table 4.25

**The Variation in Reading Achievement as Explained by the Environmental, Organizational, and Conflict Variables with the Outlier District Data Removed**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371 <sup>a</sup>	.138	-.194	.32540

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.440	10	.044	.415	.926 <sup>a</sup>
	Residual	2.753	26	.106		
	Total	3.193	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), CM Conflict Management, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: RA Reading Achievement



		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.339	.965		3.459	.002
	FR Fiscal Resources in Millions of thousands dollars	1.852E-04	.000	.688	.772	.447
	CP Cost Per Pupil in thousands of dollars	-1.38E-06	.000	-.005	-.015	.988
	DS Disadvantage Students (percent)	1.447E-03	.005	.075	.308	.761
	MN Number of Minorities	-2.29E-03	.003	-.239	-.811	.425
	PT Pupil to teacher ratio	-1.04E-03	.025	-.010	-.042	.967
	AT Administrative Intensity (Raw FTE)	2.153E-02	.155	.058	.139	.891
	PS Professional Sport (FTE)	2.157E-02	.116	.064	.186	.854
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.42E-04	.005	-.011	-.050	.961
	CM Conflict Management	-.275	.198	-.280	-1.384	.178
	SIZE School Size	-1.08E-03	.002	-.664	-.658	.516

a. Dependent Variable: RA Reading Achievement

The eighth model, presented in Table 4.26, attempted to capture variation in the dependent variable Math Achievement as explained by the environmental (predictor) variables of district size, disadvantaged students, cost per pupil, number of minorities, and fiscal resources); the organizational (predictor) variables of staff qualifications, pupil-teacher ratio, administrative intensity, professional support; and the (predictor) variable of conflict management with the outlier district data removed, but failed to achieve significance ( $f = .574$ ,  $p = .820$ ).

Table 4.26

**The Variation in Math Achievement as Explained by the Environmental, Organizational, and Conflict Variables with the Outlier District Data Removed**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.425 <sup>a</sup>	.181	-.134	.37028

a. Predictors: (Constant), CM Conflict Management, DS Disadvantage Students (percent), SIZE School Size, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.786	10	.079	.574	.820 <sup>a</sup>
	Residual	3.565	26	.137		
	Total	4.351	36			

a. Predictors: (Constant), CM Conflict Management, DS Disadvantage Students (percent), SIZE School Size, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), FR Fiscal Resources in Millions of thousands dollars

b. Dependent Variable: MA Mathematics Achievement

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.072	1.098		.010
	FR Fiscal Resources in Millions of thousands dollars	3.813E-04	.000	1.213	.174
	CP Cost Per Pupil in thousands of dollars	-4.48E-05	.000	-.130	.678
	DS Disadvantage Students (percent)	6.907E-03	.005	.307	.208
	MN Number of Minorities	-6.19E-03	.003	-.555	.065
	SIZE School Size	-2.74E-03	.002	-1.445	.154
	PT Pupil to teacher ratio	1.744E-02	.028	.149	.542
	AT Administrative Intensity (Raw FTE)	.168	.177	.390	.350
	PS Professional Sport (FTE)	3.514E-02	.132	.090	.792
	SQ Staff Qualification (% of teachers with a Master's degree)	-2.85E-03	.006	-.109	.613
	CM Conflict Management	-.192	.226	-.168	.402

a. Dependent Variable: MA Mathematics Achievement

The next model, presented in Table 4.27, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Reading Achievement with the outlier district data was removed. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.986) found beneath the column for Sig. F Change in row 2 to  $\alpha = .05$ ). The results also

indicated that Model 3 did not account for significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.206) found beneath the column for Sig. F Change in row 3 to  $\alpha = .05$ ). None of the models achieved significance (model one  $f = .413$ ,  $p = .836$ ; model 2  $f = .241$ ,  $p = .985$ ; model 3  $f = .390$ ,  $p = .939$ ).

Table 4.27

**Reading Achievement Reduced Model 1 Compared to Reduced Model 2 and Reduced Model 2 Compared to the Full Model with the Outlier District Data Removed**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.250 <sup>a</sup>	.063	-.089	.31074	.063	.413	5	31	.836
2	.272 <sup>b</sup>	.074	-.234	.33087	.012	.085	4	27	.986
3	.361 <sup>c</sup>	.130	-.204	.32677	.056	1.682	1	26	.206

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), TS Total Score

**ANOVA<sup>d</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.200	5	.040	.413	.836 <sup>a</sup>
	Residual	2.993	31	.097		
	Total	3.193	36			
2	Regression	.237	9	.026	.241	.985 <sup>b</sup>
	Residual	2.956	27	.109		
	Total	3.193	36			
3	Regression	.417	10	.042	.390	.939 <sup>c</sup>
	Residual	2.776	26	.107		
	Total	3.193	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), TS Total Score

d. Dependent Variable: RA Reading Achievement

Coefficients <sup>a</sup>					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.499	.656		3.811
	FR Fiscal Resources in Millions of thousands dollars	2.457E-04	.000	.913	1.097
	CP Cost Per Pupil in thousands of dollars	1.122E-05	.000	.038	.146
	DS Disadvantage Students (percent)	1.076E-03	.004	.056	.279
	MN Number of Minorities	-2.14E-03	.002	-.224	-.953
	SIZE School Size	-1.23E-03	.001	-.757	-.857
2	(Constant)	2.776	.890		3.118
	FR Fiscal Resources in Millions of thousands dollars	2.280E-04	.000	.847	.943
	CP Cost Per Pupil in thousands of dollars	3.225E-07	.000	.001	.003
	DS Disadvantage Students (percent)	5.795E-04	.005	.030	.122
	MN Number of Minorities	-1.99E-03	.003	-.209	-.697
	SIZE School Size	-1.09E-03	.002	-.673	-.656
	PT Pupil to teacher ratio	-1.12E-02	.024	-.111	-.464
	AT Administrative Intensity (Raw FTE)	-3.67E-02	.152	-.099	-.241
	PS Professional Sport (FTE)	4.187E-02	.117	.125	.358
	SQ Staff Qualification (% of teachers with a Master's degree)	-1.04E-03	.005	-.046	-.212
3	(Constant)	3.342	.981		3.405
	FR Fiscal Resources in Millions of thousands dollars	1.845E-04	.000	.685	.765
	CP Cost Per Pupil in thousands of dollars	-6.19E-07	.000	-.002	-.007
	DS Disadvantage Students (percent)	1.615E-03	.005	.084	.340
	MN Number of Minorities	-1.98E-03	.003	-.208	-.703
	SIZE School Size	-1.07E-03	.002	-.657	-.649
	PT Pupil to teacher ratio	-7.56E-03	.024	-.075	-.315
	AT Administrative Intensity (Raw FTE)	1.534E-02	.156	.041	.099
	PS Professional Sport (FTE)	3.804E-02	.115	.113	.330
	SQ Staff Qualification (% of teachers with a Master's degree)	-6.85E-04	.005	-.030	-.140
	TS Total Score	-.232	.179	-.252	-1.297

a. Dependent Variable: RA Reading Achievement

**Excluded Variables<sup>f</sup>**

						Collinearity Statistics
Model		Beta In	t	Sig.	Partial Correlation	Tolerance
1	PT Pupil to teacher ratio	-.074 <sup>a</sup>	-.342	.734	-.062	.671
	AT Administrative Intensity (Raw FTE)	-.095 <sup>a</sup>	-.251	.804	-.046	.216
	PS Professional Sport (FTE)	.071 <sup>a</sup>	.227	.822	.041	.320
	SQ Staff Qualification (% of teachers with a Master's degree)	-.037 <sup>a</sup>	-.186	.854	-.034	.768
	TS Total Score	-.254 <sup>a</sup>	-1.458	.155	-.257	.963
2	TS Total Score	-.252 <sup>b</sup>	-1.297	.206	-.246	.884

a. Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Dependent Variable: RA Reading Achievement

The next model, presented in Table 4.28, illustrated reduced model 1 compared to reduced model 2 (this is looking at how much additional variation is explained above and beyond the environmental variables when we add the four organizational variables), and reduced model 3 compared to the full model (this is looking at how much additional variation is explained above and beyond reduced model 2 when we added the variable of total score to the model) for the dependent variable of Math Achievement with the outlier district data was removed. The results indicated that Model 2 did not account for significantly more variation than Model 1 (this is noted by comparing the p-value (.893) found beneath the column for Sig. F Change in row 2 to  $\alpha = .05$ ). The results also indicated that Model 3 did not account for significantly more variation than Model 2 (this, again, is noted by comparing the p-value (.233) found beneath the column for Sig. F

Change in row 3 to  $\alpha = .05$ ). None of the models achieved significance (model one  $f = .876$ ,  $p = .509$ ; model 2  $f = .562$ ,  $p = .815$ ; model 3  $f = .664$ ,  $p = .746$ ).

Table 4.28

**Math Achievement Reduced Model 1 Compared to Reduced Model 2 and Reduced Model 2 Compared to the Full Model with the Outlier District Data Removed**

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.352 <sup>a</sup>	.124	-.018	.35070	.124	.876	5	31	.509
2	.397 <sup>b</sup>	.158	-.123	.36840	.034	.273	4	27	.893
3	.451 <sup>c</sup>	.204	-.103	.36508	.046	1.493	1	26	.233

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), TS Total Score



**ANOVA<sup>d</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.538	5	.108	.876	.509 <sup>a</sup>
	Residual	3.813	31	.123		
	Total	4.351	36			
2	Regression	.687	9	.076	.562	.815 <sup>b</sup>
	Residual	3.664	27	.136		
	Total	4.351	36			
3	Regression	.886	10	.089	.664	.746 <sup>c</sup>
	Residual	3.465	26	.133		
	Total	4.351	36			

a. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars

b. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE)

c. Predictors: (Constant), SIZE School Size, DS Disadvantage Students (percent), MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR Fiscal Resources in Millions of thousands dollars, SQ Staff Qualification (% of teachers with a Master's degree), PT Pupil to teacher ratio, PS Professional Sport (FTE), AT Administrative Intensity (Raw FTE), TS Total Score

d. Dependent Variable: MA Mathematics Achievement

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.714	.740		3.668	.001
	FR Fiscal Resources in Millions of thousands dollars	4.120E-04	.000	1.311	1.631	.113
	CP Cost Per Pupil in thousands of dollars	-1.86E-05	.000	-.054	-.214	.832
	DS Disadvantage Students (percent)	4.019E-03	.004	.178	.923	.363
	MN Number of Minorities	-4.33E-03	.003	-.388	-1.708	.098
	SIZE School Size	-2.15E-03	.002	-1.133	-1.326	.194
2	(Constant)	2.678	.991		2.701	.012
	FR Fiscal Resources in Millions of thousands dollars	4.113E-04	.000	1.309	1.527	.138
	CP Cost Per Pupil in thousands of dollars	-4.36E-05	.000	-.127	-.411	.685
	DS Disadvantage Students (percent)	6.298E-03	.005	.280	1.194	.243
	MN Number of Minorities	-5.98E-03	.003	-.537	-1.881	.071
	SIZE School Size	-2.75E-03	.002	-1.450	-1.483	.150
	PT Pupil to teacher ratio	1.033E-02	.027	.088	.385	.703
	AT Administrative Intensity (Raw FTE)	.128	.169	.296	.754	.458
	PS Professional Sport (FTE)	4.937E-02	.130	.126	.380	.707
	SQ Staff Qualification (% of teachers with a Master's degree)	-3.41E-03	.006	-.130	-.620	.540
3	(Constant)	3.273	1.097		2.985	.006
	FR Fiscal Resources in Millions of thousands dollars	3.655E-04	.000	1.163	1.356	.187
	CP Cost Per Pupil in thousands of dollars	-4.46E-05	.000	-.129	-.424	.675
	DS Disadvantage Students (percent)	7.388E-03	.005	.328	1.393	.176
	MN Number of Minorities	-5.97E-03	.003	-.536	-1.895	.069
	SIZE School Size	-2.72E-03	.002	-1.436	-1.482	.150
	PT Pupil to teacher ratio	1.414E-02	.027	.121	.528	.602
	AT Administrative Intensity (Raw FTE)	.182	.174	.422	1.050	.303
	PS Professional Sport (FTE)	4.534E-02	.129	.116	.352	.728
	SQ Staff Qualification (% of teachers with a Master's degree)	-3.03E-03	.005	-.116	-.556	.583
	TS Total Score	-.244	.200	-.227	-1.222	.233

a. Dependent Variable: MA Mathematics Achievement

1	PT Pupil to teacher					Collinear
		Beta	t	Sig.	Partia	y Statisti
	AT Intensity (Raw	.21 <sup>a</sup>	.58	.56	.10	.21
	PS Professional (FTE	.12 <sup>a</sup>	.41	.68	.07	.32
	SQ Staff (% of teachers Master's	- <sup>a</sup>	-	.63	-	.76
	TS Total	- <sup>a</sup>	-	.30	-	.96
2	TS Total	- <sup>b</sup>	-	.23	-	.88

Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage  
b. MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR

Predictors in the Model: (Constant), SIZE School Size, DS Disadvantage  
MN Number of Minorities, CP Cost Per Pupil in thousands of dollars, FR  
c. Millions of thousands dollars, SQ Staff Qualification (% of teachers with a

### Comparison of Results to The Findings of Bidwell and Kasarda

Both similarities and differences can be seen when one analyzes the results of the researcher's study and those found by Bidwell and Kasarda. Table 4.29 compares the significant findings in each study.

Table 4.29

### Comparison of Results to The Findings of Bidwell and Kasarda

Variable	McLellan & West	Bidwell & Kasarda
Staff Qualifications	Non-significant RA & MA	Significant RA only
Pupil/Teacher ratio	Non-significant RA & MA	Significant RA & MA
Prof. Support	Non-significant RA & MA	Non-significant RA & MA
Admin. Intensity	Non-significant RA & MA	Significant RA & MA
Minorities	Non-significant RA & MA	Significant RA & MA

Bidwell and Kasarda found that the better qualified the certificated staff the higher the levels of reading and math achievement but their findings regarding math

achievement were not statistically significant. This study found no significant correlation between these variables. Bidwell and Kasarda found that as pupil teacher ratios declined across districts the median achievement scores rose. This study found no significant correlation between these variables. Bidwell and Kasarda found that the effect of professional staff support on math achievement was slight, on reading achievement positive, but not statistically significant. This study found no significant correlation between these variables. Bidwell and Kasarda found that as administrative intensity rose achievement scores declined. This study found no significant correlation between these variables. Bidwell and Kasarda found that the percentage of non-white students in a district had a depressing effect on median levels of student achievement. This study found no significant correlation between these variables.

### Research Questions

1. Did organizational characteristics contribute to district achievement levels and if so, how much of the variation in achievement was explained by these organizational characteristics? According to data obtained in this study organizational characteristics did not have a significant impact on district achievement levels in math or reading.
2. Did environmental conditions of the district contribute to district achievement levels and if so, how much of the variation in achievement was explained by these environmental conditions? According to data obtained in this study environmental characteristics did not have a significant impact on district achievement levels in math or reading.

3. Did conflict between the superintendents and principals of small Nebraska rural schools contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in the degree of conflict?  
According to data obtained in this study the level of conflict between the superintendent and principal did not have a significant impact on district achievement levels in math or reading.
4. Did measures of organizational health contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in a measure of organizational health? According to data obtained in this study measures of organizational health did not have a significant impact on district achievement levels in math or reading.
5. How much additional explanatory power was created by the addition of the independent variable of conflict between the superintendent and principal?  
According to data obtained in this study the explanatory power of this study was not increased by the addition of the independent variable of conflict between the superintendent and principal.

## Chapter 5

### Summary, Implications, and Recommendations

#### Summary of the Study

Bidwell & Kasarda (1975) used data from 104 school districts in Colorado to examine determinants of organizational effectiveness. For each of these districts five environmental conditions, three components of district structure, and one of staff composition were linked in a causal model to the median reading and mathematics test scores of the district's high school students. The environmental conditions were size, fiscal resources, percent non-white in the population of the district's community, and the education and income levels of the parental risk population. The measures of district structure were pupil-teacher ratio, administrative intensity and the ratio of supporting professional staff to teachers. The staff composition variable was qualification level of the professional staff.

This study differed from the Bidwell and Kasarda (1975) study in several ways. Environmental variables were similar with few exceptions, but parental education level was not examined in this study. The school districts in the Bidwell and Kasarda (1975) study ranged from small districts to very large districts. This study involved only relatively small rural school districts. The Bidwell and Kasarda study also used the median reading and mathematics achievement test scores of the district high school students. This study used a weighted average score to represent each school district's K-12 reading and mathematics achievement test scores. In an attempt to increase the explanatory power of the Bidwell and Kasarda (1975) study, this study analyzed the

additional variables thought to relate to achievement. Measurement of these additional variables was accomplished by developing an organizational health survey.

This study had two purposes. The first and over-riding purpose was to examine school district variables in terms of their contribution to student achievement. The second purpose was to examine whether the questions on the instrument measured general levels of leadership and conflict and what effect, if any, these levels had on student achievement. The researcher was interested in studying the aforementioned impact in order to offer suggestions to help improve leadership in Nebraska public school districts.

#### Research Questions

1. Was there a statistically significant relationship between environmental variables and achievement variables?
2. Was there a statistically significant relationship between organizational variables and achievement variables?
3. Was there a statistically significant relationship between the variables of instructional leadership and conflict within a district as measured by the Organizational Health Survey subscale and achievement levels?
4. Was there a statistically significant relationship between the organizational health variables and achievement variables?
5. Was there additional explanatory power created by the addition of the independent variables of district leadership and conflict?

#### Summary of Findings

##### Relationship to Bidwell and Kasarda Study

Results from Bidwell & Kasarda (1975) indicated that increases in pupil-teacher ratio and administrative intensity depressed median levels of achievement; whereas, higher staff qualifications fostered increased student achievement. As pupil-teacher ratios declined across districts, the two median achievement scores rose. In contrast, this study found no statistically significant correlation between pupil teacher ratio and achievement. While the findings of this study did not support the Bidwell & Kasarda's findings, there have been many studies that have resulted in similar findings (Cohen, G. et. al., 2000, Hanushek, E. A., 2000; Krueger, A. B., 2000; Lazear, E., 1999; Bohrnstedt, G.W. & Stecher, B. M., 1999; Rotherham, A., 1999; and Sternnack, S., 1974). Educators have heard for many years that fewer students per class should lead to more individualized instruction, and thus improved achievement. As noted in Bidwell and Kasarda (1975) "The more students a teacher must handle during a class session, the less refined the teacher's response to students is likely to be"(p 62). The greater the teacher's classroom "span of control," the poorer the daily decisions in teaching. If we assume that student achievement is some positive function of the rates of interaction between teacher and student, then the more pupils per teacher the lower the aggregate level of achievement should be (Bidwell & Kasarda, 1975). The findings of the two studies may indicate that there is an optimal pupil-teacher ratio. If the pupil-teacher ratio in a district is too high, scores may go down. If the ratio is too small, scores may go down. Thus, conclusions about the impact of size on achievement must be guarded.

Bidwell and Kasarda (1975) believed that as the relative size of the administrative component increased, human resources would be diverted from instruction at a rate not overcome by the contribution of administration to instructional effectiveness.



Consequently, levels of student achievement would be negatively affected by increasing levels of administrative intensity. This study found no statistically significant relationship between administrative intensity and student achievement.

Bidwell & Kasarda (1975) found a statistically significant relationship between staff qualifications and reading achievement, but not math achievement. This study found no statistically significant relationship between staff qualifications and student achievement. This researcher shares Bidwell and Kasarda's opinion that if educators are willing to entertain the possibility that a teacher's qualifications are in fact related to teaching skill, then the teacher-intensive character of instruction implies that the greater the proportion of well-qualified teachers in a school district, the higher the district's level of student achievement. There are many studies that support this belief (Wenglinsky, H., 2000; Goldhaber, D.D. & Brewer, D.J, 2000; Raymond, M., Fletcher, S., & Luque, J., 2001; Hawk, P., Coble, C.R., & Swanson, M., 1985; and Fetler, M., 1999). The lack of statistical significance in math achievement may have resulted from measurement error. This may also be explained by the possibility that the development of mathematical skills is not as responsive to the aggregate qualifications of teachers and other key personnel as are reading skills.

Bidwell & Kasarda found the effects of professional support staff on district levels of achievement were even weaker than they had predicted. The effect of this variable on mathematics achievement was slight, on reading achievement positive but not statistically significant. This study found no significant correlation between professional support staff and student achievement.

Of the environmental conditions used by Bidwell & Kasarda (1975), only percent non-white had consistently significant direct effects on median achievement levels. But other environmental conditions (resources especially) have important indirect effects on achievement via their direct effects on school district structure and staff qualifications.

Initially, the data yielded a very strong negative correlation between the number of minorities and student achievement. As with the Bidwell & Kasarda (1975) study, the results from this study indicated that the number of minorities had a depressing effect on student achievement. This finding is discussed further in the Relationship of Variables section.

This study showed no statistically significant correlation between student achievement and the number of disadvantaged students while the Bidwell and Kasarda (1975) study found a negative correlation. Bidwell and Kasarda believed that students from so-called disadvantaged families tend to be less motivated and less able. Therefore, if a district seeks a more-than-minimal standard of achievement for all of its pupils, the presence of high proportions of such students may require a district to provide competent teachers and such professional services as remedial reading programs (Bidwell & Kasarda, 1975). Since this study indicated an even stronger correlation between student achievement and the number of disadvantaged students, this researcher concurs with Bidwell & Kasarda regarding the importance of competent teachers and remedial programs.

Bidwell and Kasarda (1975) found a positive correlation between fiscal resources and reading and math achievement, even though their direct effects were small. In contrast, this study found no statistically significant correlation between student

achievement and fiscal resources. The results reflect a failure to examine dependencies among environmental and organizational properties of school districts and the consequences for student achievement of these dependencies. It also appears that this study failed to give clear evidence of the fact that as school districts command more money they hire more and better-qualified front-line staff, investing in both teachers and supporting professional specialists. The results of this study also run contrary to the belief that at the district level, at least so far as investment in teachers is concerned, the availability of revenues has important consequences for student achievement (Odden, A., 2001; Hendrie, C., 1999; Miles, K.H. & Darling-Hammond, 1998; & Bidwell & Kasarda, 1975).

Bidwell & Kasarda (1975) found that district size, had, over-all, a very slight effect on student achievement, whether reading or math. Their study appeared to indicate the mixed blessings of large school districts. Other studies have also shown that in terms of raising achievement, reducing class size does not guarantee success (Johnson, 2000). The wisdom of many in this country speaks to the notion that larger school districts do a better job of instruction because of the amount and diversity of resources for instruction (Conant, 1967). This study found no statistically significant correlation between size and math and reading achievement. These results would not appear to support the proponents of class size reduction who claim that small classes result in fewer discipline problems and allow teachers more time for instruction and individual attention and more flexibility in instructional strategies (Halbach, Ehrle, Zahorik, & Molnar, 2001). The findings of the two studies may indicate that there is an optimal range for district size. If the size of the district is too large, scores may go down. If the size of the district is too small, scores

may go down. Thus, conclusions about the impact of district size on achievement must be guarded. It is one thing to point out the findings of this study; quite another to claim that this is the way it works in the real world of K-12 education.

### Relationship of Variables

This study did have significant findings. However, when looking at the data it was noticed that one school district had a much larger percentage of minority students than the remainder of the districts in the study. As a result, it was necessary to reanalyze the data after removing the data from the aforementioned district.

Initially, there was a statistically significant relationship between the organizational health survey variables and district math achievement levels. However, when the variables were analyzed separately, only the human resource management and organizational structure variables were significantly related to district math achievement levels. The initial results indicated that a higher degree of appropriate utilization of human resources resulted in lower district math achievement scores. The more appropriate the district's organizational structure, the higher the district math achievement scores. When these results were reanalyzed, with the outlier district data removed, the model no longer worked. Also, significance was not obtained in the model using the same independent variables regressed against reading achievement.

Initially, there was a statistically significant negative relationship between the environmental variable of the number of minorities and district math and reading achievement levels. The results indicated that the greater the number of minority students, the lower the math and reading achievement scores. When these results were reanalyzed, with the outlier district data removed there was no longer a statistically

significant relationship between the environmental condition of the number of minorities and district math and reading achievement levels.

There were no statistically significant relationships between organizational characteristics (pupil-teacher ratio, administrative intensity, numbers of professional support staff, and certificated staff qualifications) and district math and reading achievement levels.

There were no statistically significant relationships between instructional leadership or conflict levels within a district, as measured by the Organizational Health Survey subscale and district math and reading achievement levels.

When reviewing the correlations between reading and math achievement and the environmental and organizational variables, there are both similarities and differences when compared to the study conducted by Bidwell & Kasarda (1975). Both studies found a predictable a high positive correlation between reading achievement and math achievement. Both studies found a positive correlation between achievement and staff qualifications, but this study showed a much weaker correlation. Both studies found a correlation between reading and math achievement and pupil teacher ratio. However, Bidwell & Kasarda found a negative correlation while this study showed a positive, but weak correlation. Both studies found a negative correlation between reading and math achievement and administrative intensity. A weak correlation between reading and math achievement and size was found in both studies. However, in this study a negative correlation was found in reading achievement and size whereas Bidwell and Kasarda found a positive correlation between these variables. Both studies found a negative correlation between reading and math achievement and number of minorities. While this

study originally found a statistically significant negative correlation, which was not the case in Bidwell and Kasarda's findings, the removal of the outlier district in this study resulted in findings much more in line with the results obtained by Bidwell & Kasarda. Both studies found a negative correlation between reading and math achievement and the number of disadvantaged students, but this study found a stronger negative correlation.

When reviewing the correlations between the organizational and environmental variables there are both similarities and differences when compared to the study conducted by Bidwell & Kasarda (1975). Both studies found a positive correlation between pupil teacher ratio and staff qualifications. Both studies found a positive correlation between professional support staff and teacher qualifications. However, this study found the correlations to be statistically significant while Bidwell & Kasarda did not. Both studies found a positive correlation between professional support staff and pupil teacher ratio. However, this study found the correlations to be statistically significant while Bidwell & Kasarda did not. This study found a positive correlation between administrative intensity and the variables of teacher qualifications, pupil teacher ratio, and professional support staff with professional support staff being statistically significant. Bidwell & Kasarda found a negative correlation between administrative intensity and these variables and none were found to be statistically significant. This study found a positive correlation between size and the variables of teacher qualification, pupil teacher ratio, professional support staff, and administrative intensity with staff qualifications, pupil teacher ratio, professional support and administrative intensity all being statistically significant. Bidwell & Kasarda found a positive correlation between size and the variables of teacher qualifications, pupil teacher ratio, and professional

support. They found a negative correlation between size and administrative intensity. They found the variables of administrative intensity, pupil teacher ratio, and teacher qualifications to be statistically significant. This study found a negative correlation between minorities and teacher qualifications and pupil teacher ratio. A positive correlation was found between minorities and professional support, administrative intensity, and size with administrative intensity being statistically significant. Bidwell & Kasarda found positive correlations between minorities and teacher qualifications, pupil teacher ratio, size, and disadvantaged students. They found negative correlations between minorities and professional support staff, administrative intensity, and fiscal resources. This study found a positive correlation between disadvantaged students and number of minorities. This correlation was statistically significant. A negative correlation was found between the variables of disadvantaged students and teacher qualifications, pupil teacher ratio, professional support staff, administrative intensity, and size. None of these variables were found to be statistically significant. Bidwell and Kasarda found negative correlations between disadvantaged students and teacher qualifications, pupil teacher ratio, professional support staff, size, and fiscal resources. Teacher qualifications were found to be statistically significant. They found a positive correlation between disadvantaged students and administrative intensity, but it was not statistically significant. This study found a positive correlation between fiscal resources and teacher qualifications, pupil teacher ratio, professional support staff, administrative intensity, size, number of minorities, and the number of disadvantaged students. The variables of pupil teacher ratio, professional support staff, administrative intensity, and size were statistically significant. Bidwell & Kasarda found a positive correlation between fiscal

resources and the variables of teacher qualifications, pupil teacher ratio, professional support staff, and administrative intensity. Teacher qualifications, pupil teacher ratio, and professional support staff were statistically significant. A negative correlation was found between fiscal resources and size.

When reviewing the correlations between reading and math achievement and the organizational health variables, there is only one statistically significant correlation. There was a positive correlation between math achievement and creativity. However, all items on the survey are statistically significantly correlated to one another. As a result, given the high correlations of all the items caution must be used when interpreting this as a statistically significant result. Also, as previously indicated, this researcher believed that conflict between the superintendent and principal would have a statistically significant impact on achievement levels. The fact that this belief is not supported by this study could be due to the high correlation of all items on the survey. As a result, the researcher believes further research on this topic is warranted.

#### Implications of the Study

As in most secondary analyses, the measures in this study are deficient in certain respects. In addition to the well-documented disadvantages of standardized achievement tests for measuring “true scores” on individual and group achievement, Nebraska does not use uniform state-wide standardized achievement testing. Most of the districts in this study used the California Achievement Test, Terra Nova Test, Comprehensive Test of Basic Skills, and the Iowa Test of Basic Skills. All achievement test results were normed, however, by the national distribution of performance by grade on the particular test administered by each school district. National norming by grade level improves



comparability of group achievement scores across school districts, though not as much as the researcher would have preferred.

This researcher's comments are tentative, since the coefficients that have been reported are modest, and the researcher could not control for several pertinent student inputs (especially levels of academic ability). Nevertheless, to argue that little can be done through the formal organization of schooling to affect students' academic attainment is, in light of this study, premature. If the findings of this study are sustained by further work, eight will have direct bearing on steps that may be taken at the school district level to maximize aggregate levels of student academic achievement.

First, while this study found no statistically significant relationship between staff qualifications and student achievement the author believes that well-qualified teachers in large relative numbers will stand as a potent resource for schooling. This statement may be a truism, but it is often forgotten.

Second, the results of this study indicated there was no statistically significant relationship between pupil teacher ratio and student achievement. These results would seem to be in direct conflict with the widely held beliefs of small school advocates that low pupil teacher ratios are essential for increased student achievement. The findings of this study may be due to the fact that most of the schools selected were relatively the same size. As a result, the pupil teacher ratios in most of the schools were similar. Also, this study used a relatively small sample size.

Third, the results of this study found no statistically significant relationship between professional support staff and student achievement. These results reflect the researcher's belief that support staff perhaps provide too little information to teachers that

is consistently used, tend not to work directly with students, or center their efforts at the extremes of the student distributions (e.g., the most or least able). According to Bidwell & Kasarda (1975), professional support staff may also, in fact, lack effective techniques to foster the academic work of either students or teachers.

Fourth, the results of this study found no statistically significant relationship between administrative intensity and student achievement. While the study did not find a significant relationship between these variables, it is the researcher's belief that as money is diverted from learning opportunities for students (i.e. instruction, highly qualified staff, etc.) to administrative costs achievement will decline.

Fifth, the results of this study found no statistically significant relationship between increasing district fiscal resources and student achievement. Despite this finding, due to the limited nature of this study, the researcher supports the argument made by many educators that the more a district spends, the better will be its teachers and services and the more achievement will increase.

Sixth, the results of this study found no statistically significant relationship between school district size and student achievement. Yet a "sacred cow" of small school proponents is that smaller size school districts equate to higher student achievement. That may be, but if one defines learning as performance on standardized tests, this study cannot support that claim.

Seventh, the initial results of this study indicated that the number of minorities in a school district has a negative effect on student achievement. However it was found that these results were mainly due to the data obtained from one school district involved in the study. The school in question was a reservation school and thus the findings of this study

would indicate that various issues in this particular school were the cause of the initial statistically significant relationship. The researcher believes that lower achievement scores in this district were the result of reservation schools dealing with a higher number of social ills than other schools in the study.

Lastly, the results of this study found no statistically significant relationship between a higher number of disadvantaged students and student achievement. The researcher believes that despite this finding disadvantaged students come to school less prepared and motivated than peers from wealthier families. Schools with large numbers of disadvantaged students will need to address student needs through remedial programs in order to increase student achievement.

#### Recommendations for Further Research

1. The researcher discovered that all of the variables being measured by the School District Organizational Health Survey were very highly correlated to each other. In order to validate the findings of this study research that uses enough subjects to permit factor analysis should be completed.
2. Replicate the study using a larger number of schools. By increasing the school district sample size the researcher believes that the results would more accurately reflect whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement.
3. Replicate the study using a larger number of teacher respondents from each school district. By increasing the number of respondents from each school district the researcher believes that the results would more accurately reflect whether and how

attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement.

4. Replicate the study using a more statistically sound procedure for comparing student achievement scores than the one used in this study. School districts in this study used different standardized achievement tests for measuring student achievement. While national norming by grade level improves comparability of achievement scores across school districts, it does not do so to the extent that the researcher would wish. Future research should be attempted that uses a common student achievement indicator among all school districts. By doing so the researcher believes that the results would more accurately reflect whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement.
5. Replicate the study using an instrument that more effectively measures the variable of conflict between the superintendent and the principal. As previously noted, the researcher hypothesized that there would be a significant relationship between conflict between the superintendent and principal and academic achievement. The result of this study did not support this belief. The researcher discovered that all of the variables being measured by the School District Organizational Health Survey were very highly correlated to each other. This could very well be the reason there were no significant findings in regards to the variable of conflict and therefore, future studies using an appropriate instrumentation are needed in order to support the researcher's continued belief that conflict between the principal and superintendent negatively impacts student achievement.

6. **Simplistic methods cannot be used to analyze multiple variables and their effect on student achievement within school districts. Further research studies investigating individual variables rather than multiple variables are needed to assess their impact on student achievement. Due to the complex nature of the learning process, caution should be used when interpreting data such as that reported in this study.**
7. **The unit of analysis for further studies should originate at the building level. Due to the variation in size of school districts across Nebraska, the effects that specific variables might have on student achievement might be masked in larger school districts.**
8. **The results of this study point to the need for the Nebraska State Department of Education to develop a more sound method of gathering student achievement data. The effectiveness of education in Nebraska schools can be improved with data that can be statistically analyzed. The current data reported in the Nebraska State Report Card does not meet this criterion.**

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**Appendix A**  
**IRB Approval Notice**



Research Compliance Services  
 Institutional Review Board  
 103 Whittier Bldg.  
 2255 W Street  
 P.O. Box 830849  
 Lincoln, NE 68583-0849  
 (402) 472-6965  
 FAX (402) 472-9323

April 30, 2001

Mr. Kent McLellan  
 307 Washington Ct.  
 Morrill NE 69358

IRB#: 2001-04-265 EX

TITLE OF PROPOSAL: **School District Variables and Their Contributions to Student Achievement in Nebraska Class III Public School Districts**

Dear Mr. McLellan:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. This project has been approved by the Unit Review Committee from your college and sent to the IRB. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study. Your proposal seems to be in compliance with this institution's Multiple Project Assurance M-1510 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt.

You are authorized to implement this study as of the Date of Final Approval: 4/30/01. This approval is Valid Until: 4/30/02.

1. Enclosed is the IRB approved Informed Consent form for this project. Please use this form when making copies to distribute to your participants. If it is necessary to create a new informed consent form, please send us your original so that we may approve and stamp it before it is distributed to participants.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board. Before the anniversary date of your project you will be contacted about submitting a continuing review and provide a progress report of the research project or its closure.

Sincerely,

A handwritten signature in cursive script, reading 'Sharon Evans'.

Sharon A. Evans, Chair  
 for the IRB

cc: Dr. Donald Helmuth  
 Faculty Adviser  
 Unit Review Committee

**Appendix B**  
**Organizational Health Survey**

### Survey of School District Organizational Health

This survey is designed to measure your perceptions of different parts of your school district. It contains eighty items, but does not take long to complete. Some items will appear repetitious. In responding to these questions, please base your responses on your perception of the total district rather than your specific building. Please circle the number to the right of the item that best expresses your agreement with the statement.

- 1 = Complete disagreement with the statement
- 2 = Some disagreement with the statement
- 3 = Some agreement with the statement
- 4 = Complete agreement with the statement

- |   |         |
|---|---------|
| 1) Measurable student outcomes are strongly emphasized in this school district. | 1 2 3 4 |
| 2) Our superintendent is competent in his/her job.                              | 1 2 3 4 |
| 3) This school district employs the right number of administrators.             | 1 2 3 4 |
| 4) Meetings here are usually worthwhile in this school district.                | 1 2 3 4 |
| 5) Administrators disagree a lot in this district.                              | 1 2 3 4 |
| 6) Opportunities for personal growth are plentiful in this district.            | 1 2 3 4 |
| 7) My job is important to this school district.                                 | 1 2 3 4 |
| 8) Many people generate new ideas in this school district.                      | 1 2 3 4 |
| 9) The administrators in this school district have clear goals.                 | 1 2 3 4 |
| 10) Our superintendent sets a good example for principals.                      | 1 2 3 4 |
| 11) There is little duplication of job responsibilities in this district.       | 1 2 3 4 |
| 12) In this district, we have meetings only when they are needed.               | 1 2 3 4 |
| 13) Administrators deal with each other in a friendly manner.                   | 1 2 3 4 |
| 14) This school district does a good job recruiting new employees.              | 1 2 3 4 |
| 15) Teachers feel they have an important part in this school district.          | 1 2 3 4 |

- 1 = Complete disagreement with the statement  
 2 = Some disagreement with the statement  
 3 = Some agreement with the statement  
 4 = Complete agreement with the statement

- |   |         |
|---|---------|
| 16) Creative thinking is encouraged in this school district.                                  | 1 2 3 4 |
| 17) This school district is always trying to improve student achievement.                     | 1 2 3 4 |
| 18) Administrators in this district are skilled in motivating teachers.                       | 1 2 3 4 |
| 19) This district has the right number of administrators.                                     | 1 2 3 4 |
| 20) School administrators ask teachers into their offices for informal talk.                  | 1 2 3 4 |
| 21) Teachers may disagree with administrators with no fear of being penalized.                | 1 2 3 4 |
| 22) People are assigned according to their abilities in this school district.                 | 1 2 3 4 |
| 23) Teachers are invited to make suggestions in this school district.                         | 1 2 3 4 |
| 24) The teaching staff looks at alternative choices before deciding on what to do.            | 1 2 3 4 |
| 25) In this district teachers are properly endorsed for their teaching assignments.           | 1 2 3 4 |
| 26) School administrators in this district are effective in their work.                       | 1 2 3 4 |
| 27) In this district classified staff support the work of teachers.                           | 1 2 3 4 |
| 28) Individuals feel free to discuss issues at meetings.                                      | 1 2 3 4 |
| 29) Administrators encourage debate about the best way to do things.                          | 1 2 3 4 |
| 30) Assignment of a teacher is based on the background and education of the teacher.          | 1 2 3 4 |
| 31) The teaching staff is active in working to achieve district goals.                        | 1 2 3 4 |
| 32) The teaching staff is always open to new ideas.   | 1 2 3 4 |
| 33) Teachers are recognized for superior performance of their students.                       | 1 2 3 4 |
| 34) In the district as a whole, teachers trust school administrators in this school district. | 1 2 3 4 |
| 35) When changes are needed in this district, they are made.                                  | 1 2 3 4 |



- 1 = Complete disagreement with the statement  
 2 = Some disagreement with the statement  
 3 = Some agreement with the statement  
 4 = Complete agreement with the statement

- |   |         |
|---|---------|
| 36) I am able to speak freely with school administrators.                         | 1 2 3 4 |
| 37) There is very little conflict between teachers in this district.              | 1 2 3 4 |
| 38) This district does a good job using in-service dollars for staff development. | 1 2 3 4 |
| 39) Teachers have the chance to express their feelings about important decisions. | 1 2 3 4 |
| 40) Administrators openly praise creative teachers in this district.              | 1 2 3 4 |
| 41) Administrators often publicly discuss student learning outcomes.              | 1 2 3 4 |
| 42) Teachers accept administrative decisions willingly in this district.          | 1 2 3 4 |
| 43) Administrators know their jobs in this district.                              | 1 2 3 4 |
| 44) Teachers know what is going on in this district.                              | 1 2 3 4 |
| 45) Conflict is accepted well in this district and is used constructively.        | 1 2 3 4 |
| 46) People in this district are assigned to the right responsibilities.           | 1 2 3 4 |
| 47) Teachers are often asked to serve on committees with their administrators.    | 1 2 3 4 |
| 48) Teachers are coming up with ideas that are used by the district.              | 1 2 3 4 |
| 49) Student outcomes are the most important consideration in this district.       | 1 2 3 4 |
| 50) Administrative decisions this past year have been helpful for the district.   | 1 2 3 4 |
| 51) Every person has the authority to make decisions about their assigned area.   | 1 2 3 4 |
| 52) I can see administrators whenever I need to do so.                            | 1 2 3 4 |
| 53) Teachers participate actively in settling issues.                             | 1 2 3 4 |
| 54) Administrators view teachers as the district's top resource.                  | 1 2 3 4 |
| 55) My ideas for change have been welcomed in the district.                       | 1 2 3 4 |

- 1 = Complete disagreement with the statement  
 2 = Some disagreement with the statement  
 3 = Some agreement with the statement  
 4 = Complete agreement with the statement

- |  |         |
|--|---------|
| 56) Administrators often ask teachers for ideas.                           | 1 2 3 4 |
| 57) Student achievement is highly valued here.                             | 1 2 3 4 |
| 58) Administrators are highly respected in this school district.           | 1 2 3 4 |
| 59) No one part of this school district has too much power.                | 1 2 3 4 |
| 60) I always have information ahead of any changes that are planned.       | 1 2 3 4 |
| 61) Disagreement usually leads to improvement here.                        | 1 2 3 4 |
| 62) This school district is fair to individuals.                           | 1 2 3 4 |
| 63) Administrators accept ideas for doing new things.                      | 1 2 3 4 |
| 64) Teachers are willing to try something new.                             | 1 2 3 4 |
| 65) Teachers try to do things better than they did the last time.          | 1 2 3 4 |
| 66) Teachers are given enough authority to do their jobs in this district. | 1 2 3 4 |
| 67) Teachers understand how their school district operates.                | 1 2 3 4 |
| 68) Teachers communicate well with each other in this district.            | 1 2 3 4 |
| 69) Teachers work for the best solution, not to win the argument.          | 1 2 3 4 |
| 70) Teachers have opportunity for growth in this organization.             | 1 2 3 4 |
| 71) Decisions are postponed if teachers don't agree.                       | 1 2 3 4 |
| 72) Teachers in this district are known for innovative teaching.           | 1 2 3 4 |
| 73) Very little time is wasted in this school district.                    | 1 2 3 4 |
| 74) Teachers have a clear understanding of district rules and regulations. | 1 2 3 4 |
| 75) Teachers know how this school district operates.                       | 1 2 3 4 |
| 76) Teachers have sufficient opportunity to plan together.                 | 1 2 3 4 |

- 1 = Complete disagreement with the statement  
 2 = Some disagreement with the statement  
 3 = Some agreement with the statement  
 4 = Complete agreement with the statement

- 77) Teachers do not suffer when they disagree with administrators. 1 2 3 4  
 78) Teacher absenteeism is not a problem in this district. 1 2 3 4  
 79) Administrators are interested in teacher ideas. 1 2 3 4  
 80) Teachers are creative in this school district. 1 2 3 4

### Biographical Data

1. Years experience \_\_\_\_\_

For each of the following questions, please circle the most appropriate response.

2. Primary grade level assignment:  
     **a. Elementary    b. Middle Level/Junior High    c. Secondary**
3. In responding to this instrument I based my perception on:  
     **a. The district as a whole.**  
     **b. The building that I work in.**
4. When answering questions regarding administrators I based my perception on:  
     **a. All of the administrators in the district**  
     **b. My building administrator.**

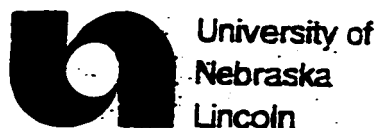
Thank you for taking the time to complete this survey.

Questions about this instrument and study may be directed to Kent McLellan or Jeff West or Miles Bryant at the following addresses:

Kent McLellan, Morrill Public Schools, 308-247-2149  
 Jeff West, Chappell Public Schools, 308-874-2911  
 Miles Bryant, University of Nebraska-Lincoln, 402-472-0960

© Pending M. Bryant, K. McLellan, & J. West

**Appendix C**  
**Recruitment Letter for Pilot Study**



Department of Educational Administration  
 513 Nebraska Hall  
 P.O. Box 880558  
 Lincoln, NE 68588-0558  
 (402) 472-3726  
 FAX (402) 472-4300

March 23, 2001

Name  
 Pilot School Name  
 Pilot School Address  
 City, State, Zip

Dear Name:

We are doctoral students at the University of Nebraska-Lincoln and we are conducting a research study to see if we can identify school district characteristics that are linked with better student achievement as measured by the new State Report Card. We need you help. You have been randomly chosen from the teachers in your school. We hope you will complete the enclosed questionnaire and return it to us.

The enclosed questionnaire contains items that address the following eight aspect of school district organization: 1) attention to student outcomes, 2) leadership, 3) organizational structure, 4) communication, 5) conflict management, 6) human resource management, 7) staff participation, 8) creativity. Please help up by completing the enclosed questionnaire; it will only take about ten minutes of your time. A self-addressed stamped envelope has been enclosed for you to return the survey. We hop that with your help we will be able to learn more about how to help students achieve.

Your responses to this study are voluntary. Your consent to participate in this study is indicated by you completing the questionnaire. Your responses will be confidential and will be kept in a secure file. Neither you nor your district will be identified by name. Our study has been reviewed by the Institutional Review Board of the University of Nebraska and has been assigned this number: 2001-04-065 EX.

Thank you for your assistance and time.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Kenton J. McLellan'.

Kenton J. McLellan  
 Primary Investigator, Phone (308) 247-2149

A handwritten signature in dark ink, appearing to read 'Jeffery D. West'.

Jeffery D. West  
 Primary Investigator, Phone (308) 874-2911

**Appendix D**  
**Letter to Superintendent**



Department of Educational Administration  
513 Nebraska Hall  
P.O. Box 880558  
Lincoln, NE 68588-0558  
(402) 472-3728  
FAX (402) 472-4300

April 2, 2001

Mr. NAME, Superintendent  
Randomly Selected High School  
Box 9999999  
Anytown, NE 88888

Dear Mr. NAME

As you know, the Nebraska Department of Education (NDE) published the first State of Nebraska Report Card in 2000. This data affords us the opportunity to examine school district characteristics that are related to student outcomes. As students in the University of Nebraska-Lincoln Educational Administration Doctoral program, we are conducting a research study of the NDE State Report Card data that we hope will not only broaden the basic understanding of organizational structure and effectiveness, but also will shed light on the question of whether school districts can make changes that will affect student achievement.

We have selected your district at random from the population of 234 Class III K-12 districts in the state. In gathering data in addition to what the state has published in its Report Card, we want to administer a questionnaire to a small number of teachers in each district that we have selected. Our intention is to identify a small sample of teachers in your district and send them a questionnaire that we have developed. The questionnaire contains items that address eight aspects of school district organization: attention to student outcomes, leadership, organizational structure, communication, conflict management, an resource management, staff participation, and creativity. The questionnaire will take only a few minutes of your teachers' time and their participation is voluntary.

By returning the completed questionnaire, it will indicate their consent to use the information provided. All responses will be kept strictly confidential and will appear only in summarized form. Your school district and teacher names will not be used in the final report.

We would like your consent to this plan for our study. If you are comfortable with what we propose, we will interpret silence as consent and begin to identify teachers so that we may mail them a questionnaire. If you would like to speak with us about this project, please contact us by April 17, 2001, at the phone numbers below or by email at [westj@pancsm.edu](mailto:westj@pancsm.edu) or [mclellan@pancsm.edu](mailto:mclellan@pancsm.edu).

Student academic achievement is a very timely topic in view of the frequently heard cry for accountability in public schools. We are hoping our doctoral study will identify district characteristics that have a relationship to student achievement. Teachers will be encouraged to contact us as well the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965.

Thank you for your assistance and time.

Sincerely,

Kenton J. McLellan

Primary Investigator, Phone (308) 247-2149

Jeff West

Primary Investigator, Phone (308) 874-2911

**Appendix E**  
**Letter Inviting Teachers to Participate**





Department of Educational Administration  
 513 Nebraska Hall  
 P.O. Box 880558  
 Lincoln, NE 68588-0558  
 (402) 472-3726  
 FAX (402) 472-4300

April 26, 2001

Dear Teacher:

IRB#2001-04-265EX

We are doctoral students at the University of Nebraska-Lincoln and we are conducting a research study to see if we can identify school district characteristics that are linked with better student achievements as measured by the new State Report Card. We need your help. You have been randomly chosen from the teachers in your school. We hope you will complete the enclosed questionnaire and return it to us.

The enclosed questionnaire contains items that address the following eight aspects of school district organization: 1) attention to student outcomes, 2) leadership, 3) organizational structure, 4) communication, 5) conflict management, 6) human resource management, 7) staff participation, and 8) creativity. Please help us by completing the enclosed questionnaire; it will take ten minutes or less to complete the survey. A self-addressed stamped envelope has been enclosed for you to return the survey. We hope that with your help we will be able to learn more about how to help students achieve.

Your responses to this study are voluntary. Your consent to participate in this study is indicated by your completing the questionnaire. Your responses will be kept confidential, kept in a secure file, and destroyed by June 1, 2002. Neither you nor your district will be identified by name. Our study has been reviewed by the Institutional Review Board of the University of Nebraska and has been assigned the above number.

If you have any questions about the research, please contact any one of the numbers listed below. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators, the University of Nebraska or any other participating agent. Your decision will not result in any loss of benefits to which you are otherwise entitled.

If you have any questions about your rights as a research participant, you may call the University of Nebraska Institutional Review Board at (402) 472-6965.

Thank you for your assistance and time.

Sincerely,

A handwritten signature of Kenton J. McLellan in cursive.

Kenton J. McLellan  
 Primary Investigator (308) 247-2149

A handwritten signature of Jeffrey D. West in cursive.

Jeffrey D. West  
 Primary Investigator (308) 874-2911

A handwritten signature of Miles Bryant in cursive.

Miles Bryant  
 Secondary Investigator (402) 472-3728

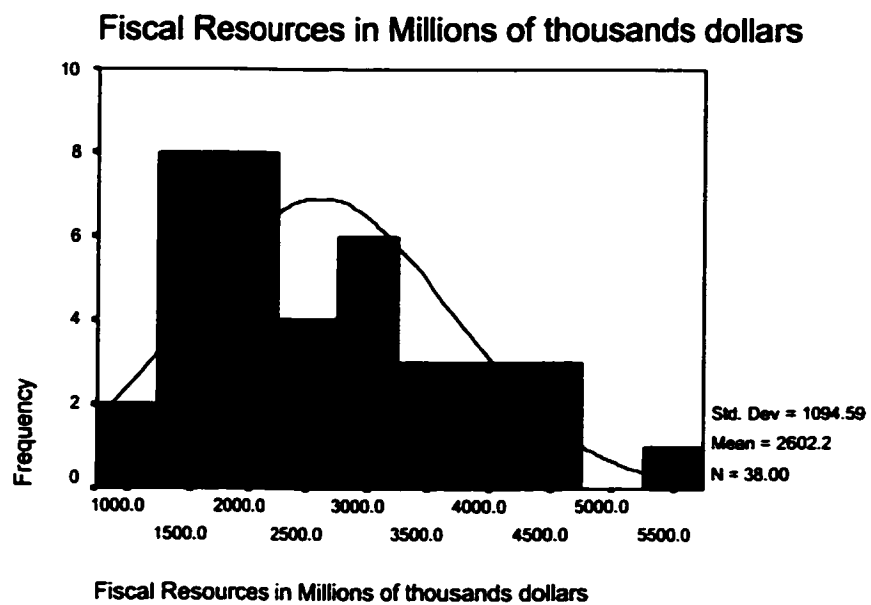
**Appendix F**  
**School Districts Used in the Study**

**Alma Public Schools**  
**Anselmo-Merna Public Schools**  
**Ashland Greenwood Schools**  
**Axtell Community Schools**  
**Bayard Public Schools**  
**Bloomfield Community Schools**  
**Centennial Public Schools**  
**Central City Public Schools**  
**Chappell Public Schools**  
**Coleridge Community Schools**  
**Conestoga Public Schools**  
**Dodge Public Schools**  
**Elkhorn Valley Schools**  
**Exeter Public Schools**  
**Hartington Public Schools**  
**Humphrey Public Schools**  
**Louisville Public Schools**  
**Lyons-Decatur Northeast Schools**  
**Mitchell Public Schools**  
**Morrill Public Schools**  
**Newcastle Public Schools**  
**Niobrara Public Schools**  
**North Loup Scotia Public Schools**  
**Palmer Public Schools**  
**Ponca Public Schools**  
**Ravenna Public Schools**  
**Red Cloud Community Schools**  
**Sargent Public Schools**  
**Scribner-Sydner Community Schools**  
**Shickley Public Schools**  
**Spencer-Naper Public Schools**  
**St. Paul Public Schools**  
**Stuart Public Schools**  
**Sutherland Public Schools**  
**Wilber-Clatonia Public Schools**  
**Wilcox Public Schools**  
**Winnebago Public Schools**  
**Wisner-Pilger Public Schools**

**Appendix G**  
**Data Frequencies and Histograms**

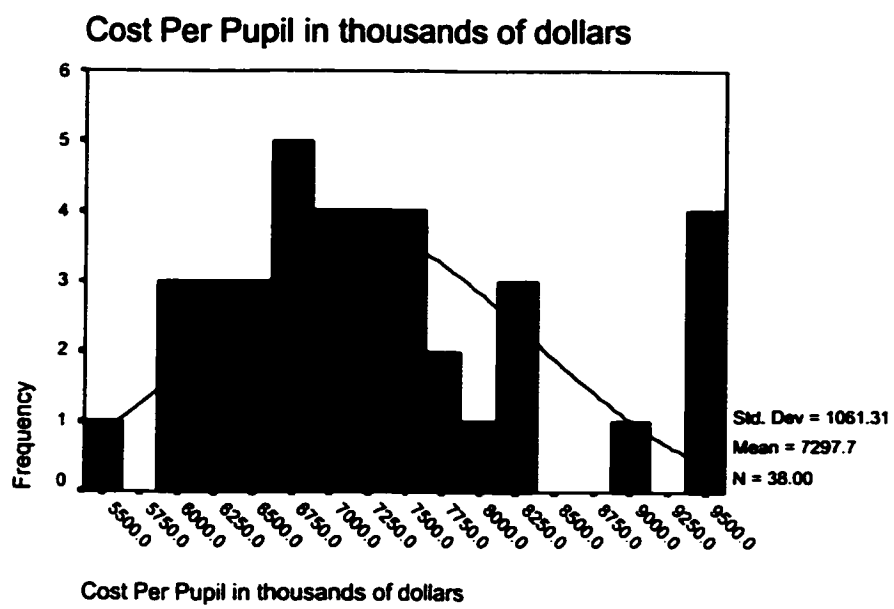
## Fiscal Resources in Millions of thousands dollars

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1249.00	2	5.3	5.3	5.3
	1322.00	1	2.6	2.6	7.9
	1384.00	1	2.6	2.6	10.5
	1400.00	1	2.6	2.6	13.2
	1462.00	1	2.6	2.6	15.8
	1504.00	1	2.6	2.6	18.4
	1633.00	1	2.6	2.6	21.1
	1645.00	1	2.6	2.6	23.7
	1679.00	1	2.6	2.6	26.3
	1751.00	1	2.6	2.6	28.9
	1860.00	1	2.6	2.6	31.6
	1864.00	1	2.6	2.6	34.2
	1902.00	1	2.6	2.6	36.8
	1929.00	1	2.6	2.6	39.5
	2040.00	1	2.6	2.6	42.1
	2221.00	1	2.6	2.6	44.7
	2244.00	1	2.6	2.6	47.4
	2309.00	1	2.6	2.6	50.0
	2416.00	1	2.6	2.6	52.6
	2511.00	1	2.6	2.6	55.3
	2702.00	1	2.6	2.6	57.9
	2756.00	1	2.6	2.6	60.5
	2856.00	1	2.6	2.6	63.2
	2859.00	1	2.6	2.6	65.8
	2886.00	1	2.6	2.6	68.4
	2979.00	1	2.6	2.6	71.1
	3120.00	1	2.6	2.6	73.7
	3338.00	1	2.6	2.6	76.3
	3438.00	1	2.6	2.6	78.9
	3503.00	1	2.6	2.6	81.6
	3861.00	1	2.6	2.6	84.2
	4011.00	1	2.6	2.6	86.8
	4099.00	1	2.6	2.6	89.5
	4358.00	1	2.6	2.6	92.1
	4425.00	1	2.6	2.6	94.7
	4612.00	1	2.6	2.6	97.4
	5508.00	1	2.6	2.6	100.0
Total		38	100.0	100.0	



**Cost Per Pupil in thousands of dollars**

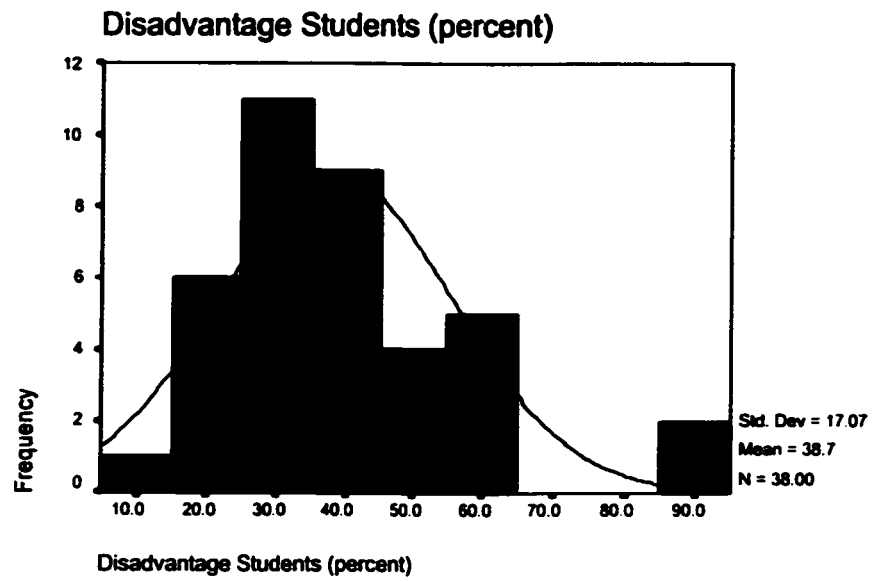
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5422.00	1	2.6	2.6	2.6
	5962.00	1	2.6	2.6	5.3
	6009.00	1	2.6	2.6	7.9
	6057.00	1	2.6	2.6	10.5
	6169.00	1	2.6	2.6	13.2
	6284.00	1	2.6	2.6	15.8
	6352.00	1	2.6	2.6	18.4
	6392.00	1	2.6	2.6	21.1
	6568.00	1	2.6	2.6	23.7
	6616.00	1	2.6	2.6	26.3
	6664.00	1	2.6	2.6	28.9
	6689.00	1	2.6	2.6	31.6
	6702.00	1	2.6	2.6	34.2
	6741.00	1	2.6	2.6	36.8
	6789.00	1	2.6	2.6	39.5
	6924.00	1	2.6	2.6	42.1
	6954.00	1	2.6	2.6	44.7
	7064.00	1	2.6	2.6	47.4
	7085.00	1	2.6	2.6	50.0
	7146.00	1	2.6	2.6	52.6
	7162.00	1	2.6	2.6	55.3
	7210.00	1	2.6	2.6	57.9
	7252.00	1	2.6	2.6	60.5
	7412.00	1	2.6	2.6	63.2
	7458.00	1	2.6	2.6	65.8
	7462.00	1	2.6	2.6	68.4
	7488.00	1	2.6	2.6	71.1
	7820.00	1	2.6	2.6	73.7
	7840.00	1	2.6	2.6	76.3
	8023.00	1	2.6	2.6	78.9
	8142.00	1	2.6	2.6	81.6
	8149.00	1	2.6	2.6	84.2
	8294.00	1	2.6	2.6	86.8
	8941.00	1	2.6	2.6	89.5
	9408.00	1	2.6	2.6	92.1
	9520.00	1	2.6	2.6	94.7
	9538.00	1	2.6	2.6	97.4
	9604.00	1	2.6	2.6	100.0
Total		38	100.0	100.0	





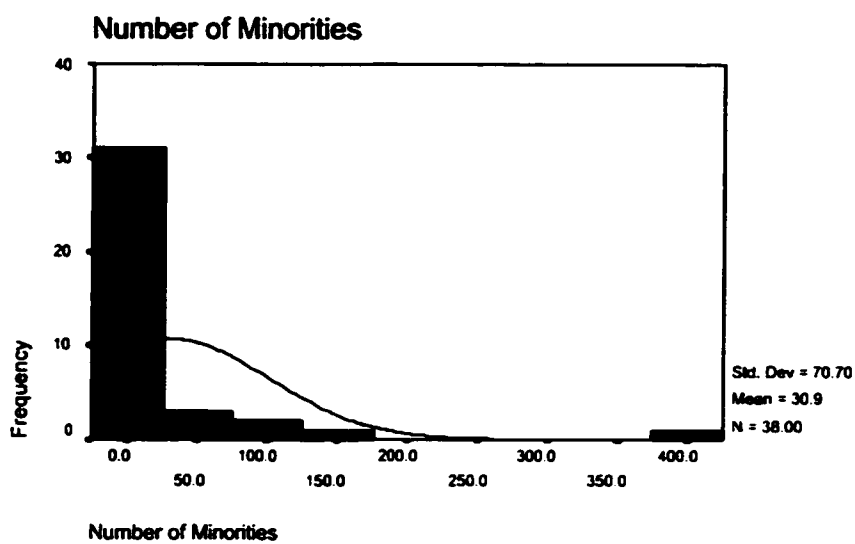
**Disadvantage Students (percent)**

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	10.00	1	2.6	2.6	2.6
	16.00	1	2.6	2.6	5.3
	18.00	1	2.6	2.6	7.9
	20.00	1	2.6	2.6	10.5
	22.00	1	2.6	2.6	13.2
	23.00	1	2.6	2.6	15.8
	24.00	1	2.6	2.6	18.4
	25.00	1	2.6	2.6	21.1
	27.00	2	5.3	5.3	26.3
	28.00	1	2.6	2.6	28.9
	29.00	2	5.3	5.3	34.2
	30.00	1	2.6	2.6	36.8
	33.00	2	5.3	5.3	42.1
	34.00	2	5.3	5.3	47.4
	35.00	2	5.3	5.3	52.6
	36.00	1	2.6	2.6	55.3
	39.00	3	7.9	7.9	63.2
	41.00	1	2.6	2.6	65.8
	42.00	1	2.6	2.6	68.4
	43.00	1	2.6	2.6	71.1
	45.00	1	2.6	2.6	73.7
	46.00	1	2.6	2.6	76.3
	50.00	1	2.6	2.6	78.9
	54.00	1	2.6	2.6	81.6
	56.00	2	5.3	5.3	86.8
	57.00	1	2.6	2.6	89.5
	61.00	1	2.6	2.6	92.1
	64.00	1	2.6	2.6	94.7
	85.00	1	2.6	2.6	97.4
	86.00	1	2.6	2.6	100.0
Total		38	100.0	100.0	



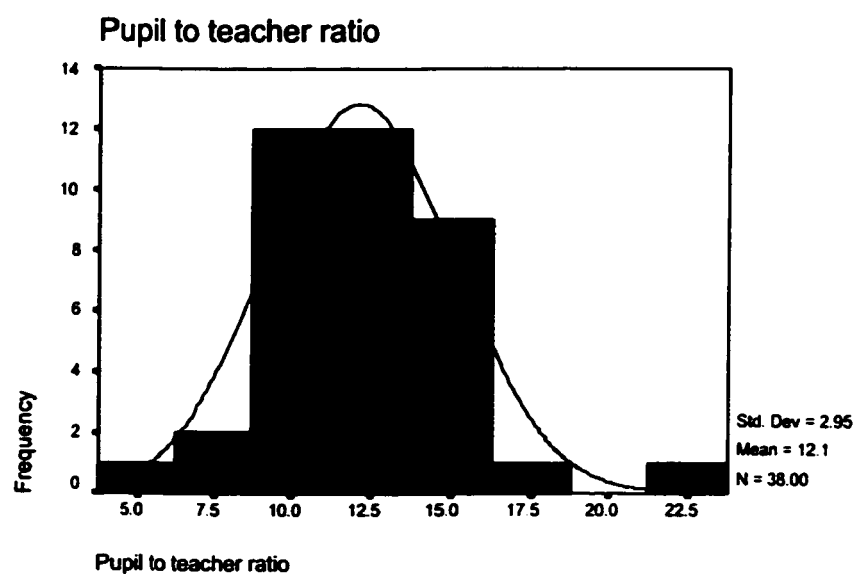
## Number of Minorities

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid .00	2	5.3	5.3	5.3
1.00	2	5.3	5.3	10.5
2.00	3	7.9	7.9	18.4
4.00	2	5.3	5.3	23.7
5.00	4	10.5	10.5	34.2
6.00	2	5.3	5.3	39.5
7.00	2	5.3	5.3	44.7
8.00	1	2.6	2.6	47.4
10.00	2	5.3	5.3	52.6
12.00	1	2.6	2.6	55.3
13.00	1	2.6	2.6	57.9
14.00	1	2.6	2.6	60.5
15.00	1	2.6	2.6	63.2
16.00	1	2.6	2.6	65.8
18.00	1	2.6	2.6	68.4
19.00	1	2.6	2.6	71.1
21.00	3	7.9	7.9	78.9
24.00	1	2.6	2.6	81.6
35.00	1	2.6	2.6	84.2
45.00	1	2.6	2.6	86.8
60.00	1	2.6	2.6	89.5
85.00	1	2.6	2.6	92.1
115.00	1	2.6	2.6	94.7
139.00	1	2.6	2.6	97.4
413.00	1	2.6	2.6	100.0
Total	38	100.0	100.0	



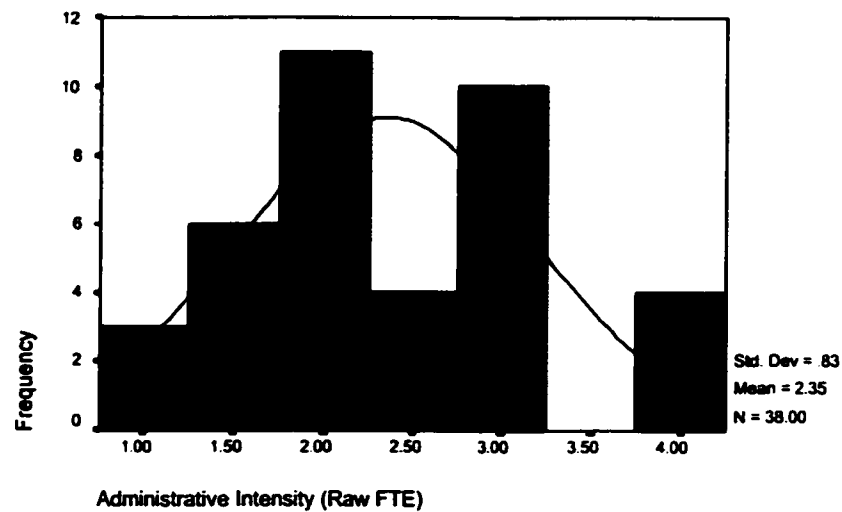
**Pupil to teacher ratio**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.00	1	2.6	2.6	2.6
	8.00	2	5.3	5.3	7.9
	9.00	3	7.9	7.9	15.8
	10.00	4	10.5	10.5	26.3
	11.00	5	13.2	13.2	39.5
	12.00	6	15.8	15.8	55.3
	13.00	6	15.8	15.8	71.1
	14.00	8	21.1	21.1	92.1
	15.00	1	2.6	2.6	94.7
	17.00	1	2.6	2.6	97.4
	23.00	1	2.6	2.6	100.0
Total		38	100.0	100.0	



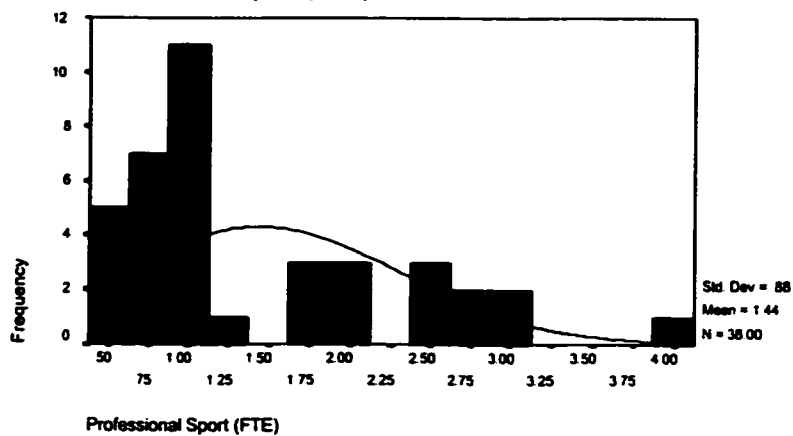
**Administrative Intensity (Raw FTE)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	5.3	5.3	5.3
	1.13	1	2.6	2.6	7.9
	1.33	1	2.6	2.6	10.5
	1.37	1	2.6	2.6	13.2
	1.50	4	10.5	10.5	23.7
	1.75	1	2.6	2.6	26.3
	2.00	10	26.3	26.3	52.6
	2.29	1	2.6	2.6	55.3
	2.50	2	5.3	5.3	60.5
	2.70	1	2.6	2.6	63.2
	3.00	10	26.3	26.3	89.5
	3.75	1	2.6	2.6	92.1
	3.80	1	2.6	2.6	94.7
	4.00	2	5.3	5.3	100.0
Total		38	100.0	100.0	

**Administrative Intensity (Raw FTE)**

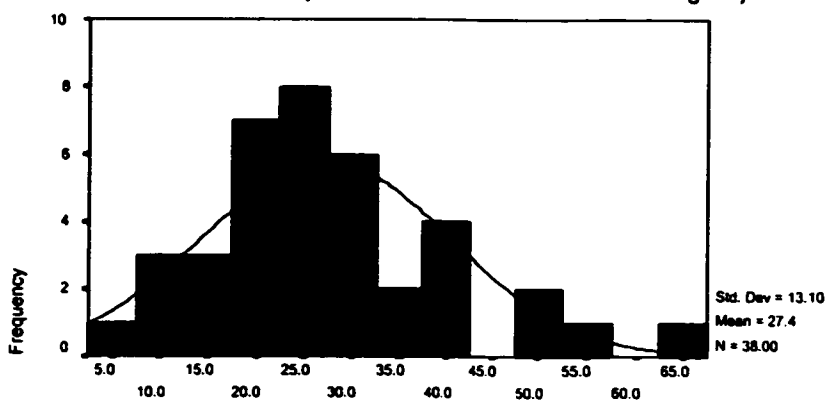
**Professional Sport (FTE)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.50	3	7.9	7.9	7.9
	.60	1	2.6	2.6	10.5
	.62	1	2.6	2.6	13.2
	.67	1	2.6	2.6	15.8
	.75	2	5.3	5.3	21.1
	.80	2	5.3	5.3	26.3
	.86	1	2.6	2.6	28.9
	.87	1	2.6	2.6	31.6
	.94	1	2.6	2.6	34.2
	.95	1	2.6	2.6	36.8
	1.00	7	18.4	18.4	55.3
	1.10	2	5.3	5.3	60.5
	1.27	1	2.6	2.6	63.2
	1.68	1	2.6	2.6	65.8
	1.70	1	2.6	2.6	68.4
	1.75	1	2.6	2.6	71.1
	1.90	1	2.6	2.6	73.7
	2.00	2	5.3	5.3	78.9
	2.40	1	2.6	2.6	81.6
	2.50	1	2.6	2.6	84.2
	2.60	1	2.6	2.6	86.8
	2.82	1	2.6	2.6	89.5
	2.87	1	2.6	2.6	92.1
	2.88	1	2.6	2.6	94.7
	3.00	1	2.6	2.6	97.4
	4.00	1	2.6	2.6	100.0
	Total	38	100.0	100.0	

**Professional Sport (FTE)**

**Staff Qualification (% of teachers with a Master's degree)**

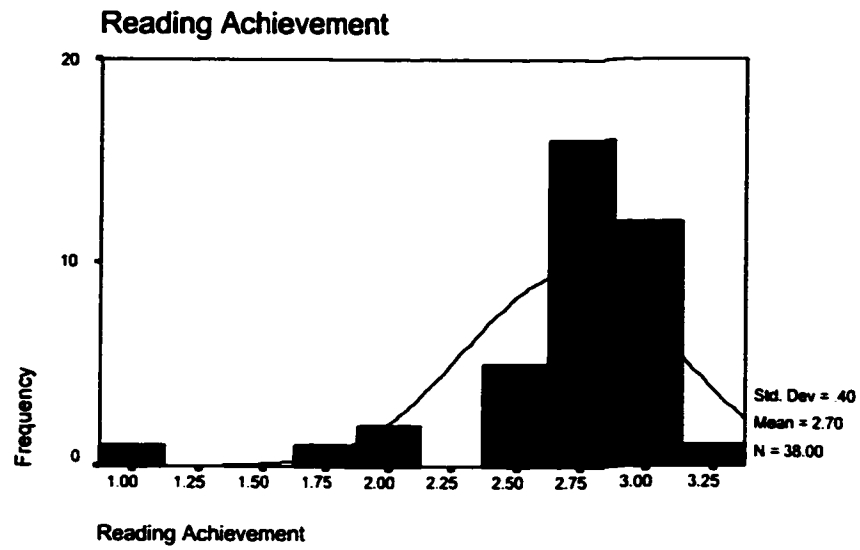
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	1	2.6	2.6	2.6
	8.00	1	2.6	2.6	5.3
	12.00	2	5.3	5.3	10.5
	13.00	1	2.6	2.6	13.2
	14.00	2	5.3	5.3	18.4
	18.00	1	2.6	2.6	21.1
	19.00	1	2.6	2.6	23.7
	20.00	1	2.6	2.6	26.3
	21.00	1	2.6	2.6	28.9
	22.00	3	7.9	7.9	36.8
	23.00	5	13.2	13.2	50.0
	24.00	1	2.6	2.6	52.6
	27.00	2	5.3	5.3	57.9
	29.00	3	7.9	7.9	65.8
	30.00	2	5.3	5.3	71.1
	31.00	1	2.6	2.6	73.7
	33.00	1	2.6	2.6	76.3
	36.00	1	2.6	2.6	78.9
	38.00	1	2.6	2.6	81.6
	40.00	1	2.6	2.6	84.2
	41.00	2	5.3	5.3	89.5
	51.00	1	2.6	2.6	92.1
	52.00	1	2.6	2.6	94.7
	53.00	1	2.6	2.6	97.4
	64.00	1	2.6	2.6	100.0
Total		38	100.0	100.0	

**Staff Qualification (% of teachers with a Master's degree)**



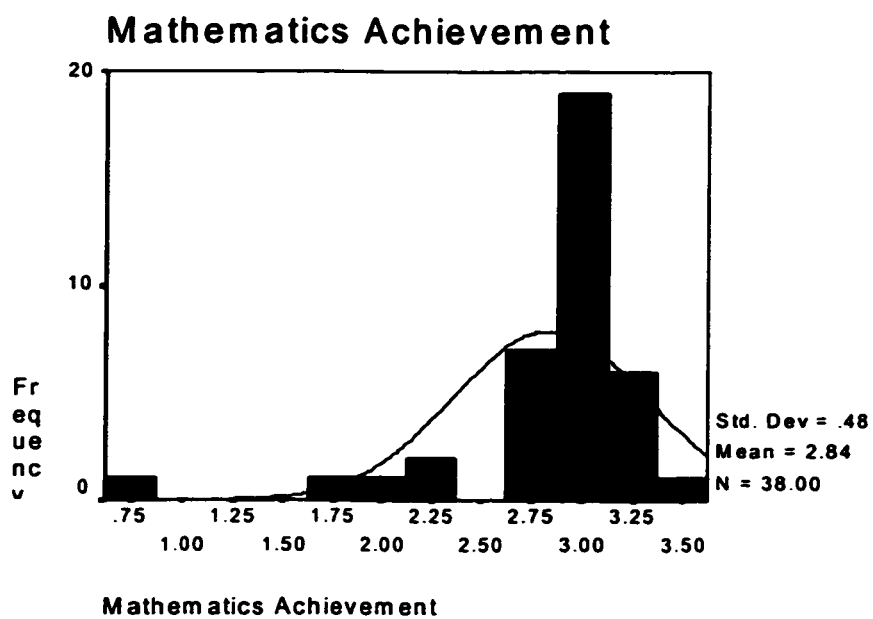
## Reading Achievement

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1.06	1	2.6	2.6	2.6
	1.86	1	2.6	2.6	5.3
	1.96	1	2.6	2.6	7.9
	2.03	1	2.6	2.6	10.5
	2.40	1	2.6	2.6	13.2
	2.42	1	2.6	2.6	15.8
	2.53	1	2.6	2.6	18.4
	2.58	1	2.6	2.6	21.1
	2.62	1	2.6	2.6	23.7
	2.65	1	2.6	2.6	26.3
	2.66	1	2.6	2.6	28.9
	2.68	1	2.6	2.6	31.6
	2.70	1	2.6	2.6	34.2
	2.75	2	5.3	5.3	39.5
	2.76	3	7.9	7.9	47.4
	2.80	2	5.3	5.3	52.6
	2.82	2	5.3	5.3	57.9
	2.83	1	2.6	2.6	60.5
	2.84	1	2.6	2.6	63.2
	2.87	1	2.6	2.6	65.8
	2.88	1	2.6	2.6	68.4
	2.89	1	2.6	2.6	71.1
	2.92	3	7.9	7.9	78.9
	2.98	1	2.6	2.6	81.6
	2.99	2	5.3	5.3	86.8
	3.03	1	2.6	2.6	89.5
	3.04	2	5.3	5.3	94.7
	3.06	1	2.6	2.6	97.4
	3.23	1	2.6	2.6	100.0
Total		38	100.0	100.0	



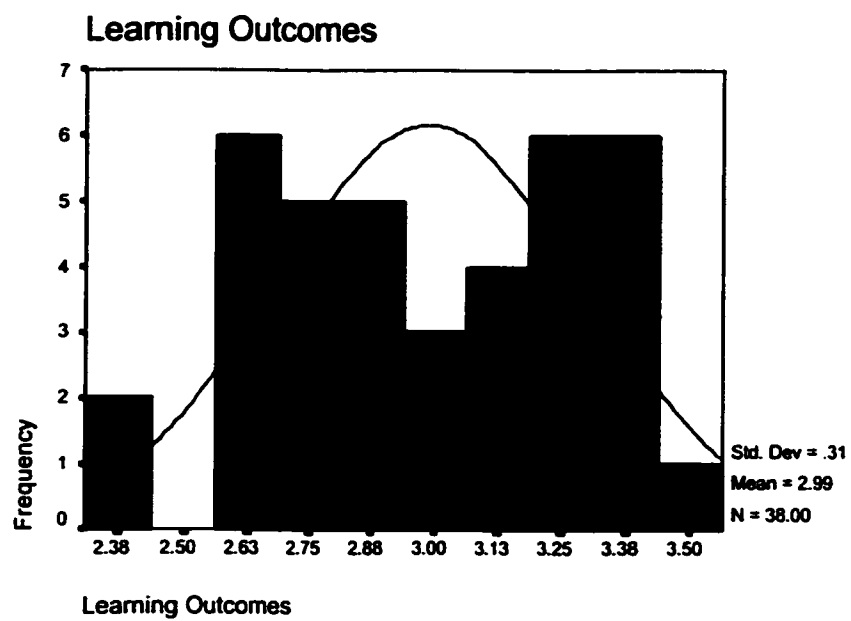
**Mathematics Achievement**

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	.84	1	2.6	2.6	2.6
	1.73	1	2.6	2.6	5.3
	1.98	1	2.6	2.6	7.9
	2.14	1	2.6	2.6	10.5
	2.30	1	2.6	2.6	13.2
	2.64	1	2.6	2.6	15.8
	2.72	1	2.6	2.6	18.4
	2.73	1	2.6	2.6	21.1
	2.75	1	2.6	2.6	23.7
	2.77	1	2.6	2.6	26.3
	2.82	1	2.6	2.6	28.9
	2.85	1	2.6	2.6	31.6
	2.88	1	2.6	2.6	34.2
	2.91	1	2.6	2.6	36.8
	2.92	1	2.6	2.6	39.5
	2.95	2	5.3	5.3	44.7
	2.96	1	2.6	2.6	47.4
	2.97	1	2.6	2.6	50.0
	2.98	2	5.3	5.3	55.3
	3.00	3	7.9	7.9	63.2
	3.03	2	5.3	5.3	68.4
	3.05	1	2.6	2.6	71.1
	3.06	1	2.6	2.6	73.7
	3.07	1	2.6	2.6	76.3
	3.10	1	2.6	2.6	78.9
	3.11	1	2.6	2.6	81.6
	3.13	1	2.6	2.6	84.2
	3.17	2	5.3	5.3	89.5
	3.19	1	2.6	2.6	92.1
	3.26	2	5.3	5.3	97.4
	3.38	1	2.6	2.6	100.0
Total		38	100.0	100.0	



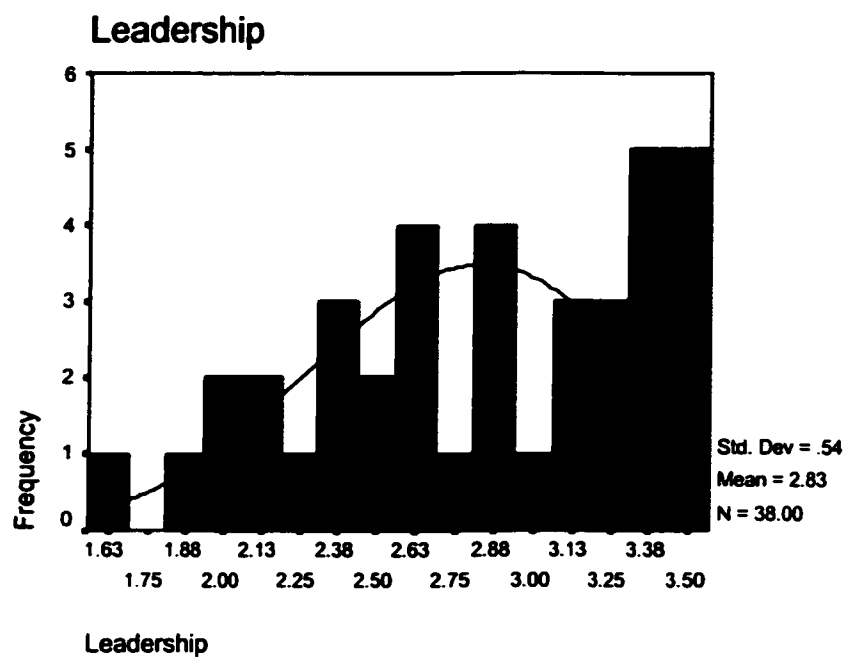
## Learning Outcomes

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	2.43	2	5.3	5.3	5.3
	2.57	1	2.6	2.6	7.9
	2.58	1	2.6	2.6	10.5
	2.60	1	2.6	2.6	13.2
	2.63	1	2.6	2.6	15.8
	2.67	2	5.3	5.3	21.1
	2.74	1	2.6	2.6	23.7
	2.75	1	2.6	2.6	26.3
	2.77	1	2.6	2.6	28.9
	2.80	2	5.3	5.3	34.2
	2.83	3	7.9	7.9	42.1
	2.87	1	2.6	2.6	44.7
	2.93	1	2.6	2.6	47.4
	2.95	1	2.6	2.6	50.0
	2.97	1	2.6	2.6	52.6
	3.06	1	2.6	2.6	55.3
	3.07	1	2.6	2.6	57.9
	3.08	1	2.6	2.6	60.5
	3.13	1	2.6	2.6	63.2
	3.15	1	2.6	2.6	65.8
	3.20	2	5.3	5.3	71.1
	3.23	1	2.6	2.6	73.7
	3.27	1	2.6	2.6	76.3
	3.30	2	5.3	5.3	81.6
	3.36	1	2.6	2.6	84.2
	3.38	2	5.3	5.3	89.5
	3.40	2	5.3	5.3	94.7
	3.43	1	2.6	2.6	97.4
	3.48	1	2.6	2.6	100.0
Total		38	100.0	100.0	



## Leadership

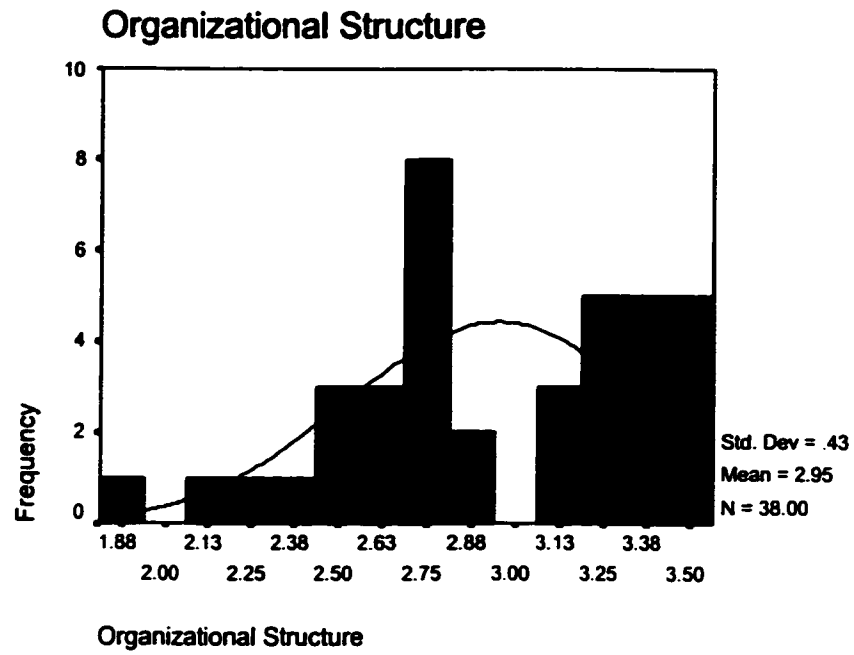
		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1.67	1	2.6	2.6	2.6
	1.83	1	2.6	2.6	5.3
	1.95	1	2.6	2.6	7.9
	1.97	1	2.6	2.6	10.5
	2.13	1	2.6	2.6	13.2
	2.18	1	2.6	2.6	15.8
	2.20	1	2.6	2.6	18.4
	2.33	2	5.3	5.3	23.7
	2.37	1	2.6	2.6	26.3
	2.47	1	2.6	2.6	28.9
	2.50	1	2.6	2.6	31.6
	2.65	2	5.3	5.3	36.8
	2.68	2	5.3	5.3	42.1
	2.70	1	2.6	2.6	44.7
	2.83	1	2.6	2.6	47.4
	2.87	1	2.6	2.6	50.0
	2.88	1	2.6	2.6	52.6
	2.93	1	2.6	2.6	55.3
	3.00	1	2.6	2.6	57.9
	3.07	1	2.6	2.6	60.5
	3.10	1	2.6	2.6	63.2
	3.18	1	2.6	2.6	65.8
	3.23	2	5.3	5.3	71.1
	3.30	1	2.6	2.6	73.7
	3.33	1	2.6	2.6	76.3
	3.42	3	7.9	7.9	84.2
	3.43	1	2.6	2.6	86.8
	3.45	1	2.6	2.6	89.5
	3.48	1	2.6	2.6	92.1
	3.50	1	2.6	2.6	94.7
	3.52	1	2.6	2.6	97.4
	3.53	1	2.6	2.6	100.0
	Total	38	100.0	100.0	





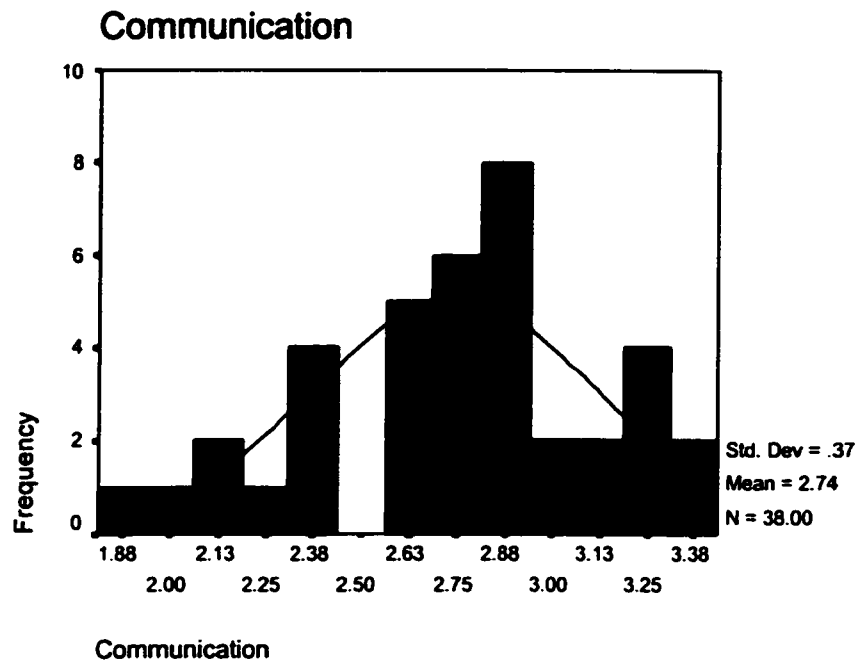
## Organizational Structure

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1.83	1	2.6	2.6	2.6
	2.17	1	2.6	2.6	5.3
	2.27	1	2.6	2.6	7.9
	2.43	1	2.6	2.6	10.5
	2.50	1	2.6	2.6	13.2
	2.53	2	5.3	5.3	18.4
	2.60	1	2.6	2.6	21.1
	2.63	1	2.6	2.6	23.7
	2.67	1	2.6	2.6	26.3
	2.73	2	5.3	5.3	31.6
	2.77	1	2.6	2.6	34.2
	2.78	4	10.5	10.5	44.7
	2.80	1	2.6	2.6	47.4
	2.88	1	2.6	2.6	50.0
	2.93	1	2.6	2.6	52.6
	3.08	1	2.6	2.6	55.3
	3.10	2	5.3	5.3	60.5
	3.20	1	2.6	2.6	63.2
	3.23	1	2.6	2.6	65.8
	3.27	1	2.6	2.6	68.4
	3.30	2	5.3	5.3	73.7
	3.33	2	5.3	5.3	78.9
	3.42	2	5.3	5.3	84.2
	3.43	1	2.6	2.6	86.8
	3.45	1	2.6	2.6	89.5
	3.46	1	2.6	2.6	92.1
	3.50	1	2.6	2.6	94.7
	3.53	1	2.6	2.6	97.4
	3.54	1	2.6	2.6	100.0
Total		38	100.0	100.0	



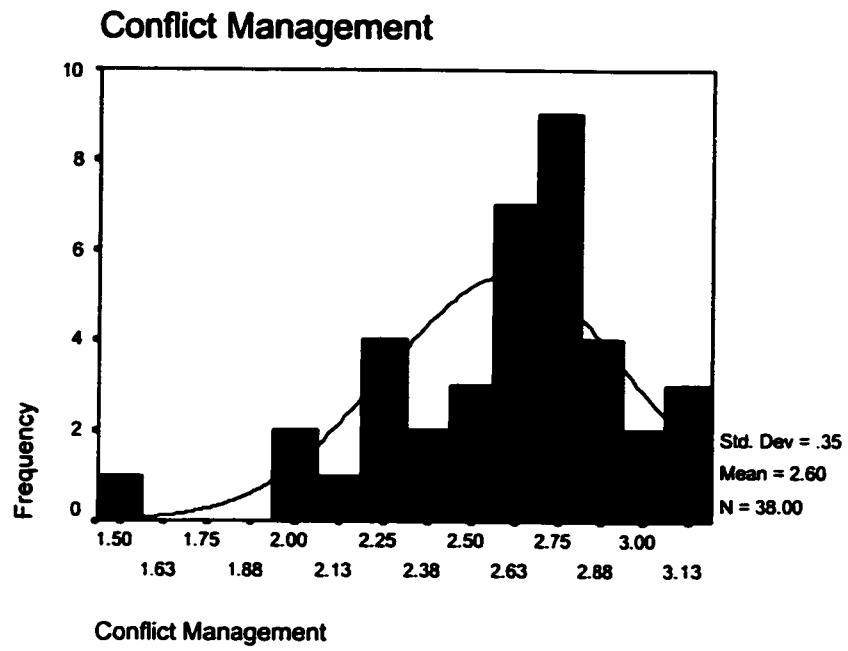
## Communication

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1.87	1	2.6	2.6	2.6
	2.05	1	2.6	2.6	5.3
	2.10	1	2.6	2.6	7.9
	2.17	1	2.6	2.6	10.5
	2.23	1	2.6	2.6	13.2
	2.33	1	2.6	2.6	15.8
	2.38	1	2.6	2.6	18.4
	2.40	1	2.6	2.6	21.1
	2.43	1	2.6	2.6	23.7
	2.60	2	5.3	5.3	28.9
	2.63	2	5.3	5.3	34.2
	2.65	1	2.6	2.6	36.8
	2.70	4	10.5	10.5	47.4
	2.73	1	2.6	2.6	50.0
	2.77	1	2.6	2.6	52.6
	2.83	1	2.6	2.6	55.3
	2.85	1	2.6	2.6	57.9
	2.87	1	2.6	2.6	60.5
	2.90	2	5.3	5.3	65.8
	2.92	1	2.6	2.6	68.4
	2.93	2	5.3	5.3	73.7
	2.97	1	2.6	2.6	76.3
	3.00	1	2.6	2.6	78.9
	3.07	1	2.6	2.6	81.6
	3.18	1	2.6	2.6	84.2
	3.20	1	2.6	2.6	86.8
	3.22	1	2.6	2.6	89.5
	3.23	1	2.6	2.6	92.1
	3.26	1	2.6	2.6	94.7
	3.33	2	5.3	5.3	100.0
Total		38	100.0	100.0	



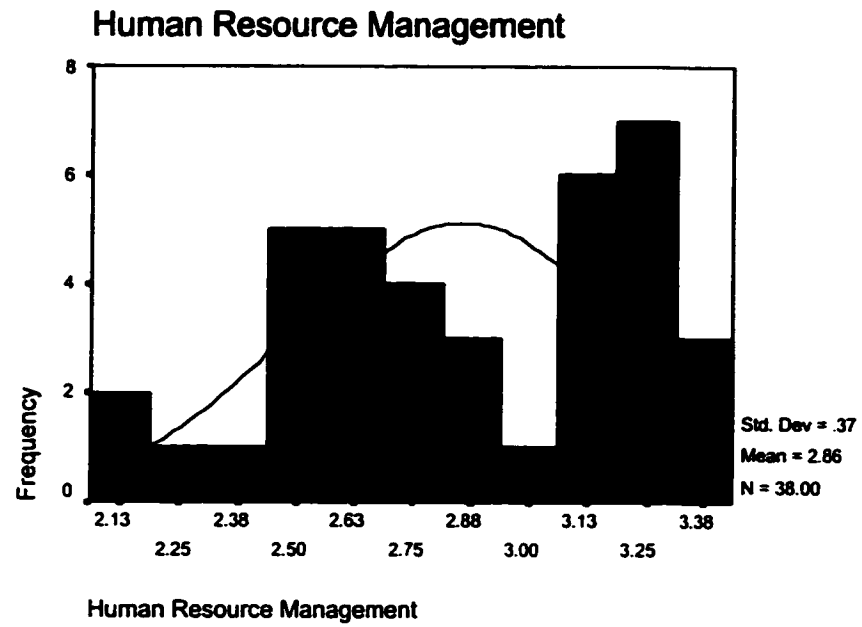
**Conflict Management**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.53	1	2.6	2.6	2.6
	1.97	1	2.6	2.6	5.3
	2.00	1	2.6	2.6	7.9
	2.17	1	2.6	2.6	10.5
	2.20	1	2.6	2.6	13.2
	2.23	1	2.6	2.6	15.8
	2.25	1	2.6	2.6	18.4
	2.27	1	2.6	2.6	21.1
	2.33	1	2.6	2.6	23.7
	2.43	1	2.6	2.6	26.3
	2.44	1	2.6	2.6	28.9
	2.45	1	2.6	2.6	31.6
	2.50	1	2.6	2.6	34.2
	2.58	1	2.6	2.6	36.8
	2.60	3	7.9	7.9	44.7
	2.63	1	2.6	2.6	47.4
	2.67	1	2.6	2.6	50.0
	2.68	1	2.6	2.6	52.6
	2.70	1	2.6	2.6	55.3
	2.73	2	5.3	5.3	60.5
	2.74	2	5.3	5.3	65.8
	2.77	1	2.6	2.6	68.4
	2.80	3	7.9	7.9	76.3
	2.83	1	2.6	2.6	78.9
	2.90	1	2.6	2.6	81.6
	2.92	1	2.6	2.6	84.2
	2.93	1	2.6	2.6	86.8
	3.00	1	2.6	2.6	89.5
	3.03	1	2.6	2.6	92.1
	3.10	2	5.3	5.3	97.4
	3.12	1	2.6	2.6	100.0
	Total	38	100.0	100.0	



## Human Resource Management

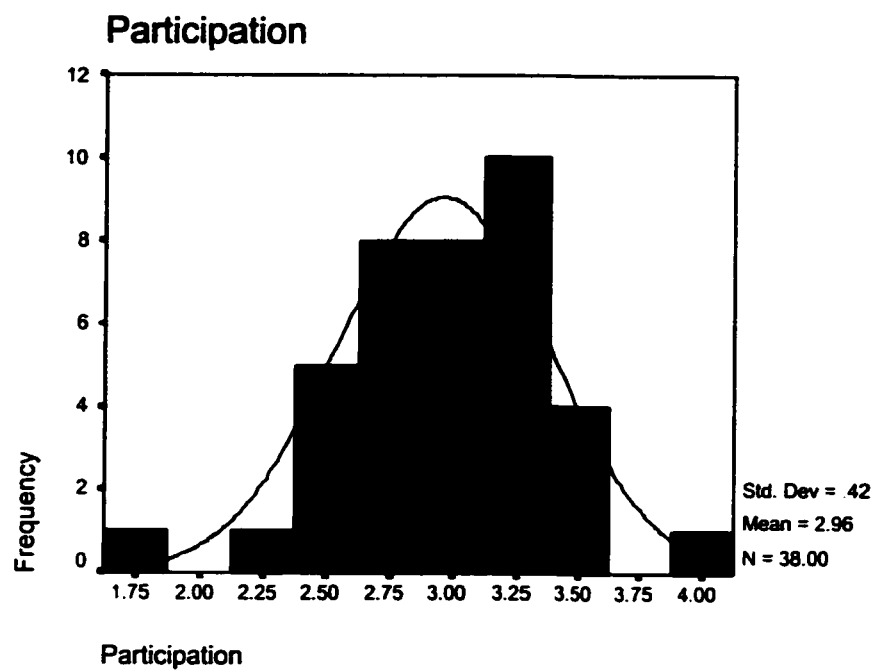
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.07	1	2.6	2.6	2.6
	2.13	1	2.6	2.6	5.3
	2.23	1	2.6	2.6	7.9
	2.38	1	2.6	2.6	10.5
	2.45	1	2.6	2.6	13.2
	2.47	2	5.3	5.3	18.4
	2.50	1	2.6	2.6	21.1
	2.53	1	2.6	2.6	23.7
	2.57	1	2.6	2.6	26.3
	2.58	1	2.6	2.6	28.9
	2.63	2	5.3	5.3	34.2
	2.64	1	2.6	2.6	36.8
	2.73	2	5.3	5.3	42.1
	2.78	2	5.3	5.3	47.4
	2.90	1	2.6	2.6	50.0
	2.93	2	5.3	5.3	55.3
	2.97	1	2.6	2.6	57.9
	3.07	2	5.3	5.3	63.2
	3.10	1	2.6	2.6	65.8
	3.13	1	2.6	2.6	68.4
	3.14	1	2.6	2.6	71.1
	3.16	1	2.6	2.6	73.7
	3.23	3	7.9	7.9	81.6
	3.25	2	5.3	5.3	86.8
	3.30	2	5.3	5.3	92.1
	3.33	1	2.6	2.6	94.7
	3.34	1	2.6	2.6	97.4
	3.35	1	2.6	2.6	100.0
Total		38	100.0	100.0	





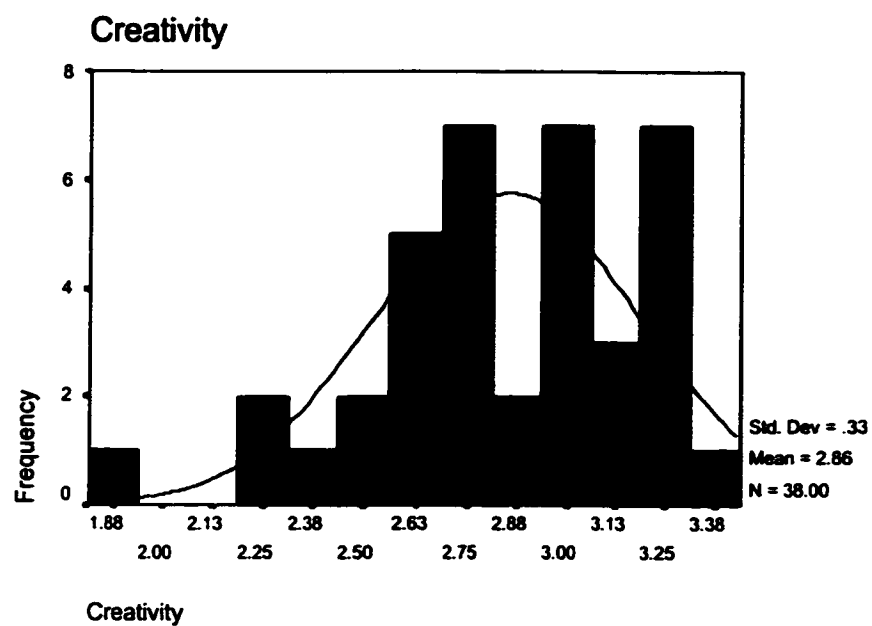
## Participation

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1.80	1	2.6	2.6	2.6
	2.19	1	2.6	2.6	5.3
	2.43	2	5.3	5.3	10.5
	2.45	1	2.6	2.6	13.2
	2.47	1	2.6	2.6	15.8
	2.50	1	2.6	2.6	18.4
	2.63	2	5.3	5.3	23.7
	2.67	1	2.6	2.6	26.3
	2.70	1	2.6	2.6	28.9
	2.77	2	5.3	5.3	34.2
	2.83	1	2.6	2.6	36.8
	2.87	1	2.6	2.6	39.5
	2.93	1	2.6	2.6	42.1
	2.97	1	2.6	2.6	44.7
	2.98	1	2.6	2.6	47.4
	3.01	1	2.6	2.6	50.0
	3.04	1	2.6	2.6	52.6
	3.05	1	2.6	2.6	55.3
	3.07	1	2.6	2.6	57.9
	3.10	1	2.6	2.6	60.5
	3.13	1	2.6	2.6	63.2
	3.14	1	2.6	2.6	65.8
	3.20	1	2.6	2.6	68.4
	3.25	1	2.6	2.6	71.1
	3.27	3	7.9	7.9	78.9
	3.28	2	5.3	5.3	84.2
	3.35	1	2.6	2.6	86.8
	3.41	1	2.6	2.6	89.5
	3.43	2	5.3	5.3	94.7
	3.44	1	2.6	2.6	97.4
	3.97	1	2.6	2.6	100.0
Total		38	100.0	100.0	



**Creativity**

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	1.93	1	2.6	2.6	2.6
	2.20	1	2.6	2.6	5.3
	2.30	1	2.6	2.6	7.9
	2.43	1	2.6	2.6	10.5
	2.50	1	2.6	2.6	13.2
	2.52	1	2.6	2.6	15.8
	2.63	4	10.5	10.5	26.3
	2.68	1	2.6	2.6	28.9
	2.73	3	7.9	7.9	36.8
	2.75	1	2.6	2.6	39.5
	2.78	1	2.6	2.6	42.1
	2.80	2	5.3	5.3	47.4
	2.83	1	2.6	2.6	50.0
	2.93	1	2.6	2.6	52.6
	2.96	1	2.6	2.6	55.3
	2.97	2	5.3	5.3	60.5
	2.98	1	2.6	2.6	63.2
	3.03	2	5.3	5.3	68.4
	3.06	1	2.6	2.6	71.1
	3.08	2	5.3	5.3	76.3
	3.13	1	2.6	2.6	78.9
	3.20	2	5.3	5.3	84.2
	3.23	3	7.9	7.9	92.1
	3.28	1	2.6	2.6	94.7
	3.30	1	2.6	2.6	97.4
	3.40	1	2.6	2.6	100.0
	Total	38	100.0	100.0	



## School Size

		Frequency	Percent	Valid Percent	Cumulativ e Percent
Valid	157.00	1	2.6	2.6	2.6
	159.00	1	2.6	2.6	5.3
	171.00	1	2.6	2.6	7.9
	173.00	1	2.6	2.6	10.5
	201.00	2	5.3	5.3	15.8
	203.00	1	2.6	2.6	18.4
	206.00	1	2.6	2.6	21.1
	211.00	1	2.6	2.6	23.7
	230.00	1	2.6	2.6	26.3
	233.00	1	2.6	2.6	28.9
	257.00	1	2.6	2.6	31.6
	258.00	1	2.6	2.6	34.2
	270.00	1	2.6	2.6	36.8
	286.00	2	5.3	5.3	42.1
	306.00	1	2.6	2.6	44.7
	307.00	1	2.6	2.6	47.4
	323.00	1	2.6	2.6	50.0
	349.00	1	2.6	2.6	52.6
	358.00	1	2.6	2.6	55.3
	385.00	1	2.6	2.6	57.9
	422.00	1	2.6	2.6	60.5
	426.00	1	2.6	2.6	63.2
	430.00	1	2.6	2.6	65.8
	445.00	1	2.6	2.6	68.4
	476.00	1	2.6	2.6	71.1
	489.00	1	2.6	2.6	73.7
	490.00	1	2.6	2.6	76.3
	500.00	1	2.6	2.6	78.9
	513.00	1	2.6	2.6	81.6
	587.00	1	2.6	2.6	84.2
	641.00	1	2.6	2.6	86.8
	645.00	1	2.6	2.6	89.5
	647.00	1	2.6	2.6	92.1
	678.00	1	2.6	2.6	94.7
	770.00	1	2.6	2.6	97.4
	812.00	1	2.6	2.6	100.0
Total		38	100.0	100.0	

