

EXAMINING THE CORRELATION BETWEEN FINANCES AND DEMOGRAPHICS ON
SELECT CATHOLIC ELEMENTARY SCHOOLS

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Chapter I

Introduction

Background

Catholic Elementary Schools throughout the United States have witnessed a steep decline in enrollment in recent years. From 2000 to 2009, Catholic school enrollments decreased by over 17 percent from 2.65 million students to 2.19 million students, a loss of 460,000 students in just nine years. (McDonald & Schultz, 2009, p. 9). As Catholics witness this decrease in enrollment, schools that are densely situated across the United States must assess their current status and Dioceses must evaluate which schools should stay open, close, regionalize or convert to academies.

Research Problem

In 2008 Pope Benedict XVI addressed the Catholic University of America and stated, “Indeed, everything possible must be done, in cooperation with the wider community, to assure that they [Catholic schools] are accessible to people of all social and economic strata. No child should be denied his or her right to an education in faith, which in turn nurtures the soul of a nation” (DeFiore, Convey, Schuttloffel, 2009, p. 7). In order for this commission to be fulfilled, dioceses throughout the United States will need to assess their Catholic Schools in order to determine strengths, weaknesses, trends, the need for interventions, the need for consolidations and ultimately the need for closures. In order for the Bishops and Superintendents in these dioceses to make sound judgments data must be tabulated, cross tabulated and analyzed in order

to find significant correlations between these data and the organizational health of the schools. In this endeavor it is hoped to discover the correlation between financial and demographic data for six Catholic elementary schools (Schools A-F) in a northeastern suburban Catholic diocese in the United States (Diocese A).

Research Questions

What are the financial trends for the selected Catholic Schools in Diocese A?

What are the demographic trends for the selected Catholic Schools in Diocese A?

Is there a correlation between these financial data and these demographic data?

Definition of Terms

Catholic school: An educational institution, recognized by the diocesan bishop, with a Christian viewpoint that is centered on Jesus Christ, His Word as revealed in the Gospel, the sacraments, moral behavior, and caring relationships in fulfillment of its evangelical missions (Congregation for Catholic Education, 1988).

Organizational health: A school that satisfies its instrumental and expressive requirements and is in accord with its three purposes: technical, managerial, and institutional. (Hoy & Feldman, 1987).

Enrollment: Annual headcount of students enrolled in a school on October 1 of each school year.

Subsidy: Amount of money that a parish gives to the elementary school to assist in balancing the budget.

Significance

This study will help to better understand the correlation between multiple variables in a school in order to determine its “health” allowing a northeastern diocese to make informed decisions as to the future of a particular school(s).

Chapter II

Review of Literature

Theoretical Framework

In order to determine how a diocese is to respond to the unique needs of Catholic Elementary schools within the diocese, a system to examine organizational health is essential. Assessing the organizational health of each school will allow a diocese to objectively make decisions as to the future of each school, based upon a comprehensive examination which provides an understanding of the correlation between data sets for various aspects in a school.

Elementary Catholic Schools have been in a serious state of survival. Catholic schools have been analyzed, praised, and promised support from a variety of sources over the years. Catholic schools close for a variety of reasons – primarily financial. The closing of a school may result from a policy decision that is unrelated to finances such as regionalization. A number of factors contribute to low enrollments, which include:

- Declining demographics – insufficient number of school-age children
- Weak leadership-either on the part of the principal or the pastor. Situation is exacerbated if diocesan support is not strong.
- Weak Catholic identity, in fact or perception
- Academic problems
- Family financial circumstances
- Strong competition from the public schools that have good academic programs

- Parents don't sufficiently value Catholic education and desire to have their children in the public school even if they can afford the tuition
(DeFiore, Convey, Schuttloffel, 2009, p. 12)

Hoy refers to "organizational climate" as the health of the school climate may be determined. The organizational climate of a school is the set of internal characteristics that distinguishes one school from another. A healthy school is one in which the teachers, administrators, and the board are in harmony, and the school meets both its organizational and people needs as it pursues its mission (Hoy and Tarter, p. 75). "They have successfully adapted to their environments, achieved their goals, and infuse common values and solidarity into the teacher work group" (Hoy and Hannum 1997, p. 293).

Dimensions of school health include cooperation of the board, administrative and teacher level. The health of a school may be determined by various factors including indicators of financial stability, enrollment (both current and trends), test results and the quality of teachers and credentials. Hoy's thinking was influenced by Parsons, who spoke of three levels of organizational authority, which are technical, managerial and institutional (Parsons, 1967). Focusing on the managerial and institutional levels of organizational authority, Hoy developed the Organizational Health Inventory. This inventory was meant to be useful in examining school effectiveness.

In an attempt to analyze the managerial and institutional effects on organizational climate, and ultimately organizational health, we will look at the correlation between financial and demographic data sets.

Goals

To discover the correlation between financial data and demographic data for six Catholic elementary schools (Schools A-F) in a northeastern suburban Catholic diocese in the United States (Diocese A) and then to determine if these correlations point to trends in the data.

Chapter III

Methodology

Setting

Six Catholic elementary schools, serving grades K-8 in a suburban northeastern Catholic diocese.

Subjects

The six Catholic elementary schools will be referred to as School A, B, C, D, E and F.

Data Collection

The data for six Catholic Elementary School over the academic years 2005-06, 2006-07, 2007-08 are divided into sections. The financial data utilized for this research is subsidy per pupil. The demographic data utilized is enrollment figures and number of Catholic families registered in a parish and number of Catholic families in a parish (not necessarily enrolled). The correlation between these data will be determined and resulting trends will be predicted utilizing linear regression.

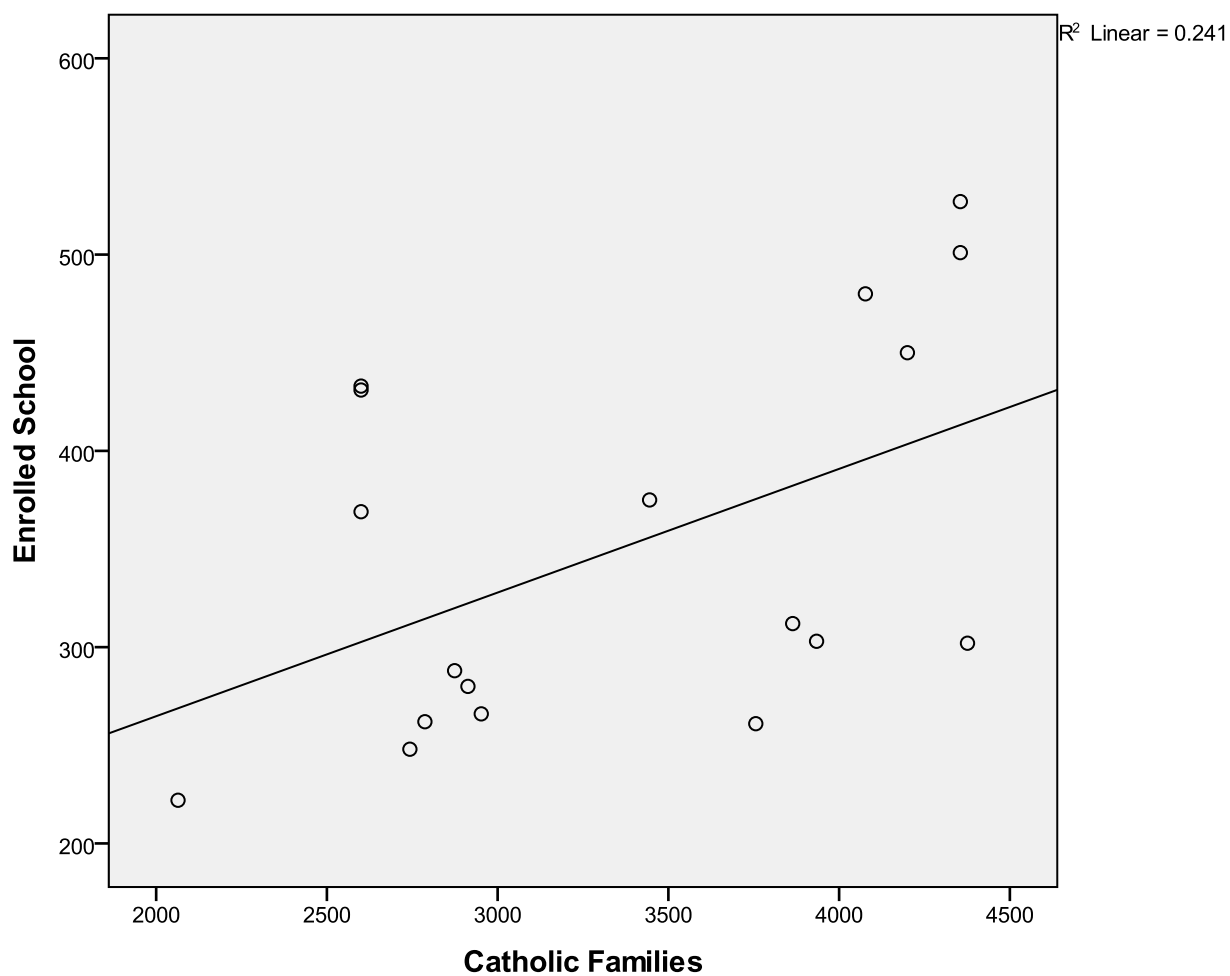
Chapter IV

Findings

DESCRIPTIVE ANALYSIS

Figure 1

Scatterplot showing the correlation and best line of fit between the enrollment in schools and registered Catholic families in parishes for the years 2005-06, 2006-07 and 2007-08.



The scatterplot shows a positive correlation between the Catholic families and the enrollment in the schools. As Catholic families register in the parish there is an increase in the enrollment in the elementary schools.

Table 1

The Coefficient table of the regression analysis showing correlation between enrollment in schools and Catholic families for the years 2005-06, 2006-07 and 2007-08.

Coefficients^a						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	138.792	96.096		1.444	.168
	Catholic Families	.063	.028	.491	2.256	.038

a. Dependent Variable: Enrolled School

Table 2

The Model Summary for the regression analysis showing the correlation between enrollment in schools and Catholic families for the years 2005-06, 2006-07 and 2007-08.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491 ^a	.241	.194	87.015

a. Predictors: (Constant), Catholic Families

Table 3

Pearson correlation table showing correlation between enrollment in schools and Catholic families for the years 2005-06, 2006-07 and 2007-08.

Correlations			
		Enrolled School	Catholic Families
Enrolled School	Pearson Correlation	1	.491 [*]
	Sig. (2-tailed)		.038
	N	18	18
Catholic Families	Pearson Correlation	.491 [*]	1
	Sig. (2-tailed)	.038	
	N	18	18

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

The above regression analysis shows there is a strong correlation of .491 between the number of enrolled Catholic families in a parish and the number of students enrolled in the corresponding elementary school. The regression equation $y = .063x + 138.792$ shows that for every 100 families that register in the parish, 6.3 students will enroll in the elementary school. The dependent variable is the number of students enrolled in the elementary schools and the independent variable is the number of families that register in the parish. 24.1% of the change in enrollment can be explained by families registering. The test also shows that at .038 the test is statistically significant.

Figure 2

Scatterplot showing the correlation and best line of fit between the subsidy per student and the number of registered Catholic families in the parish for the years 2005-06, 2006-07 and 2007-08.

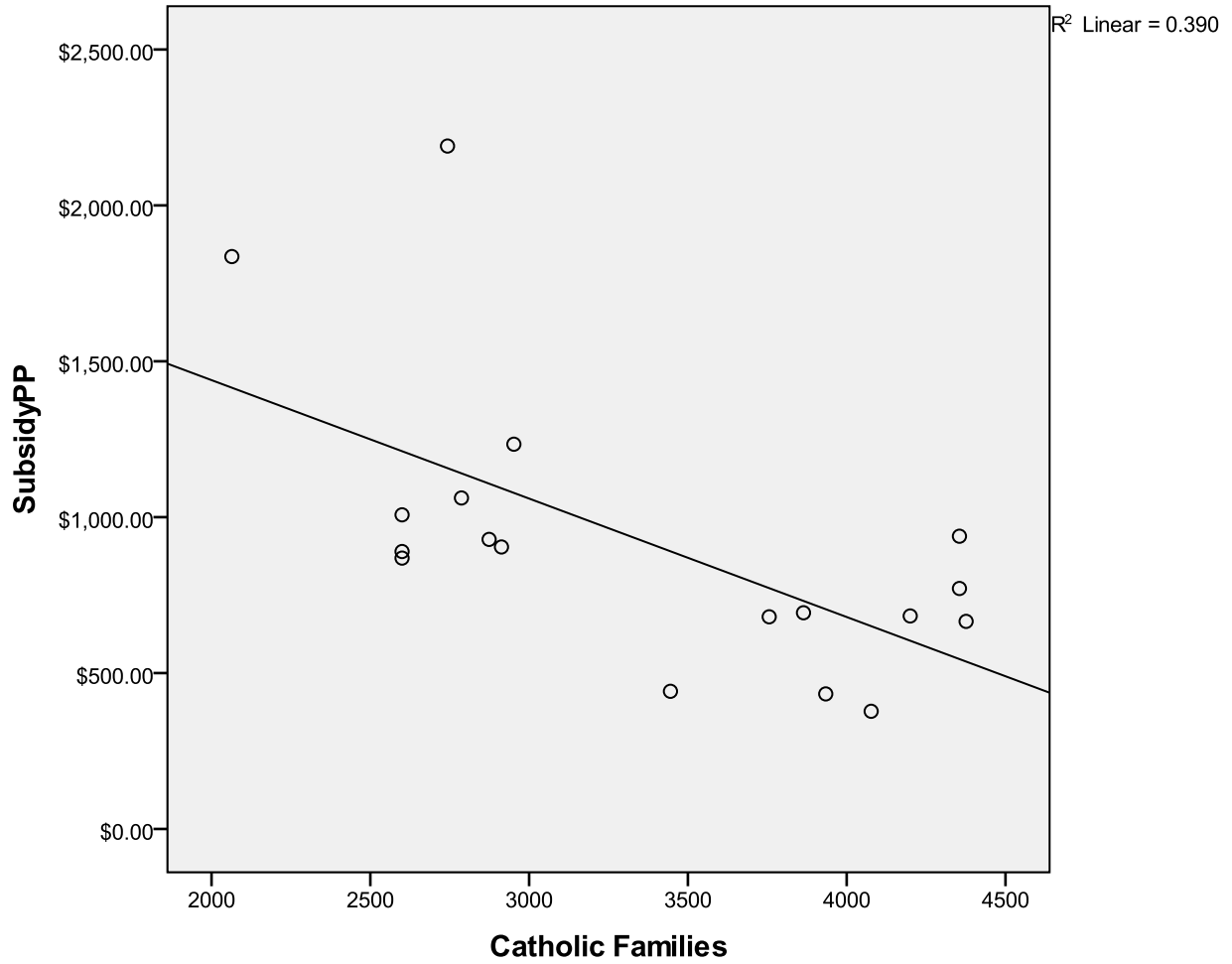


Table 4

Regression Analysis showing correlation between Catholic families registered and the subsidy per pupil for the years 2005-06, 2006-07 and 2007-08.

Correlations				
		Catholic		
		Families	SubsidyPP	
Catholic Families	Pearson Correlation	1	-.624**	
	Sig. (2-tailed)		.006	
	N	18	18	
SubsidyPP	Pearson Correlation	-.624**	1	
	Sig. (2-tailed)	.006		
	N	18	18	

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5

The Model Summary for the regression analysis showing correlation between Catholic families registered and the subsidy per pupil for the years 2005-06, 2006-07 and 2007-08.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.624 ^a	.390	.351	\$370.32277

a. Predictors: (Constant), Catholic Families

Table 6

The Coefficient table of the regression analysis showing correlation between Catholic families registered and the subsidy per pupil for the years 2005-06, 2006-07 and 2007-08.

		Coefficients ^a			
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	2199.409	408.968		5.378
	Catholic Families	-.380	.119	-.624	-3.196
					Sig.
					.000
					.006

a. Dependent Variable: SubsidyPP

The above regression analysis shows there is a strong negative correlation of .624 between the number of enrolled Catholic families in a parish and the subsidy per pupil in the elementary school. The regression equation $y = -.380x + 2199.409$ shows that for every family that registers in the parish, the subsidy is reduced by .38. The dependent value is the subsidy paid by the parish and the independent variable is the number of families that register in the parish. 39% of the change in the subsidy can be explained by families registering. The test also shows that at .006 the test is statistically significant.

Figure 3

Scatterplot showing the correlation and best line of fit between the subsidy per student and the number of students enrolled in the elementary schools for the years 2005-06, 2006-07 and 2007-08.

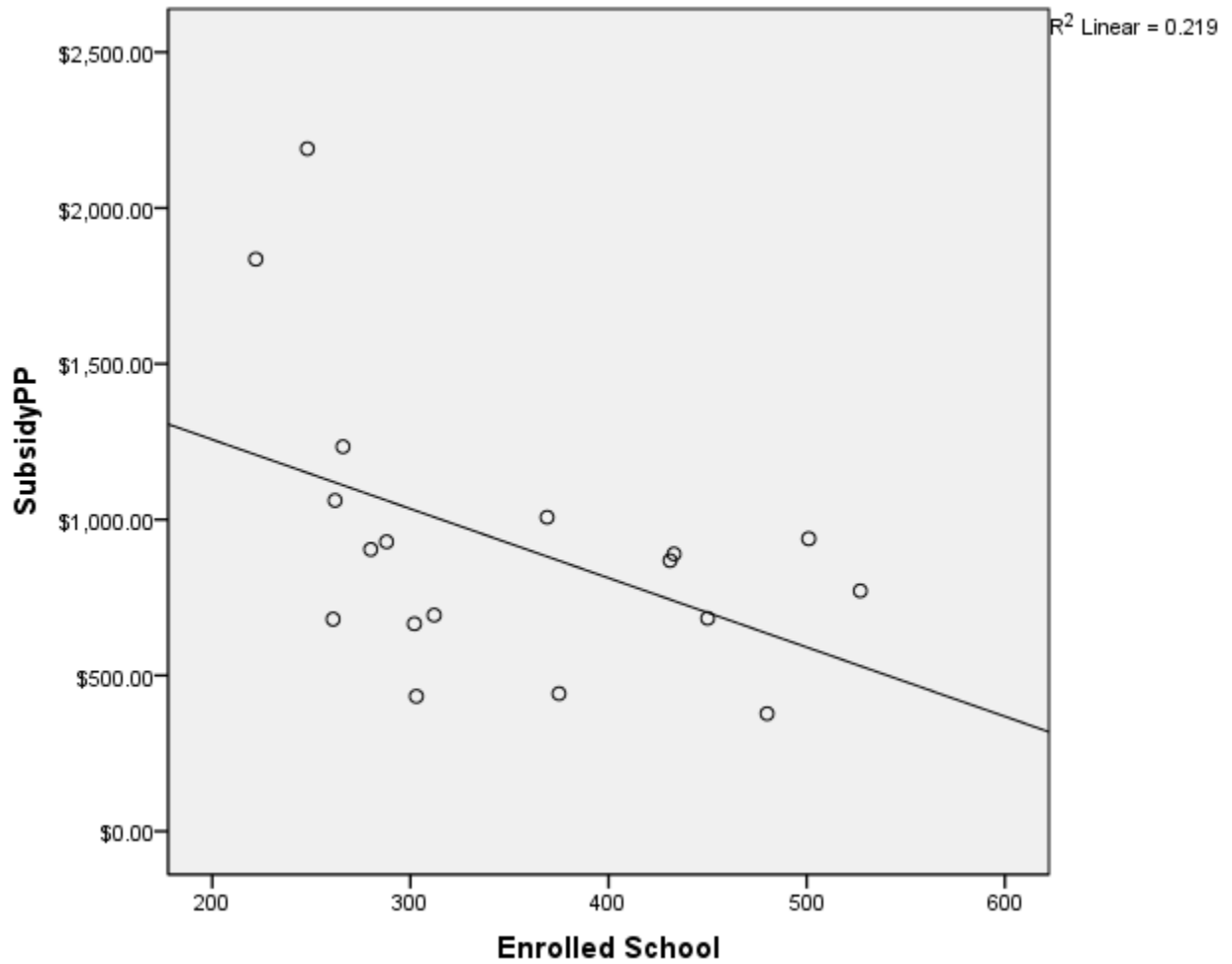


Table 7

Summary of the Pearson's correlation for the subsidy per pupil and the enrollment in elementary schools for the years 2005-06, 2006-07 and 2007-08.

Correlations			
		SubsidyPP	Enrolled School
SubsidyPP	Pearson Correlation	1	-.468
	Sig. (2-tailed)		.050
	N	18	18
Enrolled School	Pearson Correlation	-.468	1
	Sig. (2-tailed)	.050	
	N	18	18

Table 8

The Model Summary for the regression analysis for the subsidy per pupil and the enrollment in elementary schools for the years 2005-06, 2006-07 and 2007-08.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.468 ^a	.219	.170	\$418.82529

Table 9

The Coefficient table of the regression analysis for the subsidy per pupil and the enrollment in elementary schools for the years 2005-06, 2006-07 and 2007-08.

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1701.414	380.463		4.472	.000
Enrolled School	-2.222	1.048	-.468	-2.120	.050

a. Dependent Variable: SubsidyPP

The above regression analysis shows there is a strong negative correlation of .468 between the number of enrolled students and the subsidy per pupil in the elementary school. The regression equation $y = -2.222x + 1701.414$ shows that for the decline of every student enrolled in the elementary schools, the subsidy decreases by 2.222. The dependent value is the subsidy paid by the parish and the independent variable is the number of students enrolled in the elementary schools. 21.9% of the change in the subsidy can be explained by the change in enrollment. The test also shows that at .05 the test is statistically significant.

Figure 4
Enrollment in Catholic elementary schools for 2005-06, 2006-07 and 2007-08.

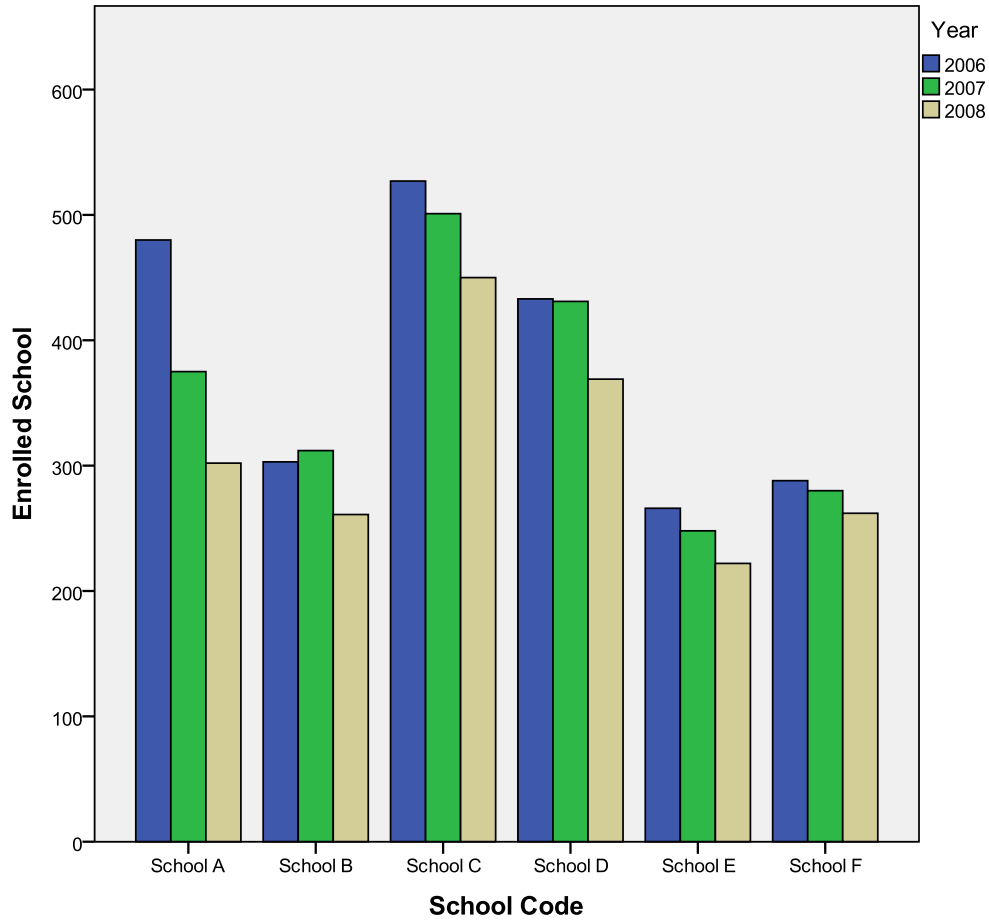


Table 9

Descriptive analysis of the enrollment for six Catholic elementary schools over three years

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Enrolled School	18	222	527	350.56	96.914
Year	18	2006	2008	2007.00	.840
Valid N (listwise)	18				

Figure 5

Boxplot showing the enrollment in Catholic elementary schools for the years 2005-06, 2006-07 and 2007-08.

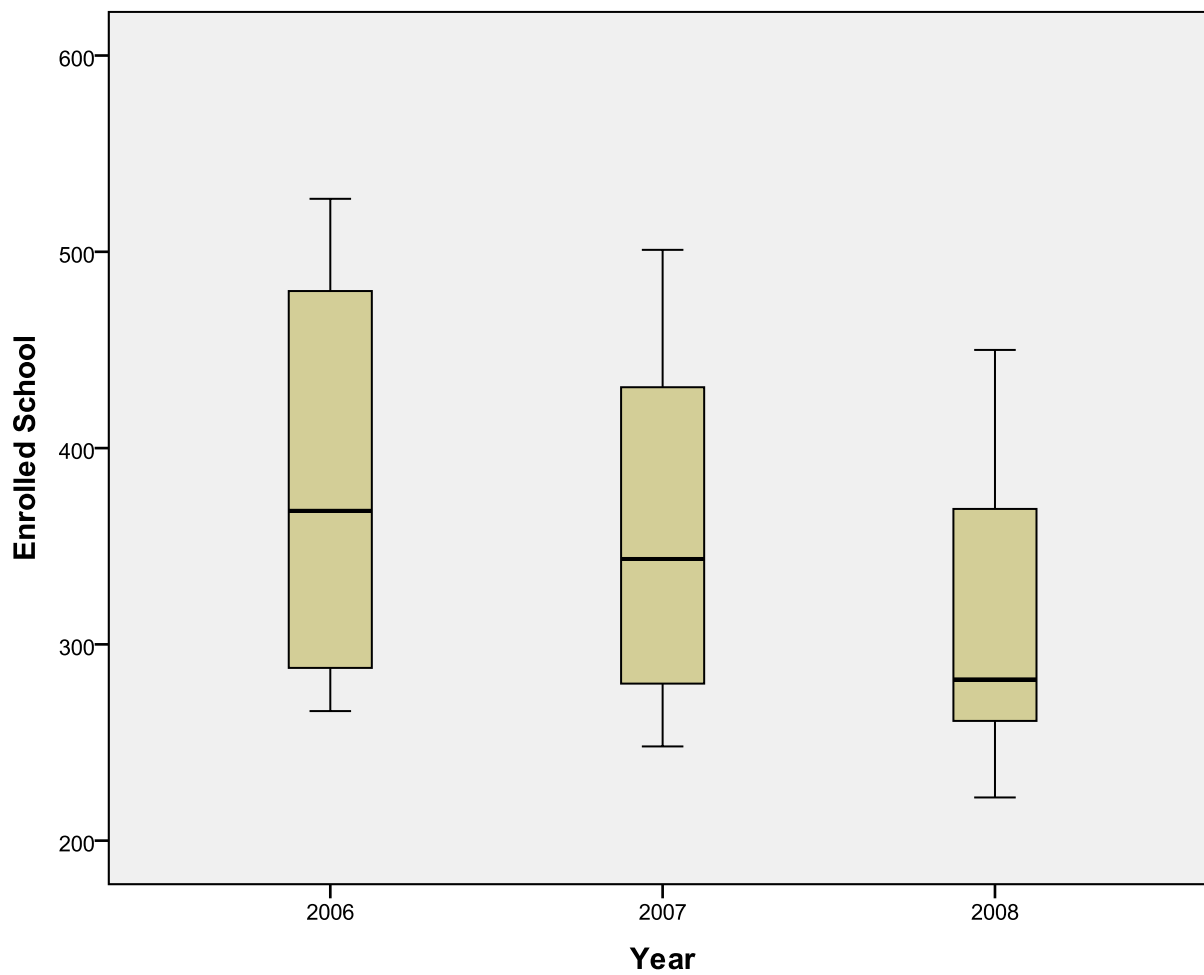


Table 10

Descriptive table for elementary school enrollment for the years 2005-06, 2006-07 and 2007-08.

Descriptives				
Year 2005-06			Statistic	Std. Error
Mean			382.83	45.372
95% Confidence Interval for	Lower Bound		266.20	
Mean	Upper Bound		499.47	
5% Trimmed Mean			381.31	
Median			368.00	
Variance			12351.767	
Std. Deviation			111.139	
Minimum			266	
Maximum			527	
Range			261	
Interquartile Range			209	
Skewness			.237	.845
Kurtosis			-2.418	1.741
Year 2006-07				
Mean			357.83	39.314
95% Confidence Interval for	Lower Bound		256.77	
Mean	Upper Bound		458.89	
5% Trimmed Mean			355.98	
Median			343.50	
Variance			9273.367	
Std. Deviation			96.298	
Minimum			248	
Maximum			501	
Range			253	
Interquartile Range			177	
Skewness			.483	.845
Kurtosis			-1.077	1.741

Mean (2007-08)		311.00	34.442
95% Confidence Interval for	Lower Bound	222.46	
Mean	Upper Bound	399.54	
		308.22	
Median		282.00	
Variance		7117.600	
Std. Deviation		84.366	
Minimum		222	
Maximum		450	
Range		228	
Interquartile Range		138	
Skewness		.965	.845
Kurtosis		.098	1.741

The above bar graph, scatterplot and tables show a steady decrease in enrollment for the six schools over the three year period from 2005-06 to 2007-08. The minimum enrollment for these six schools was 222 and the maximum enrollment was 527 with the mean enrollment for these six schools over the three year period at 351 students. The median enrollment for 2005-06 was 368 students, 2006-07 there were 343.50 students and 2007-08 there were 282 students. The trend is negative showing a declination in enrollment. The boxplot also shows the median declining with a very sharp declination in the final year. The upper range of the last year is, in fact, lower than the 75% percentile in the first year.

Chapter V

Conclusions and Recommendations

Conclusions

The goal of this study was to recognize that there is a steep declination of enrollment in the Catholic elementary schools and its possible causes. The study included financial and demographic data for six Catholic elementary schools (Schools A-F) in a northeastern suburban Catholic diocese in the United States (Diocese A). The data for the six Catholic Elementary Schools was collected over the academic years 2005-06, 2006-07, 2007-08. The financial data was the subsidy per pupil that the parish gives to the corresponding elementary school. The demographic data included the number of Catholic families living within the boundaries of a parish as well as the Catholic families that have registered in the parish. The demographic data also includes the number of enrolled students in the elementary schools from grades K-8.

The results show that there is a high level of correlation between the increase in the number of Catholic families and the increase in the number of students enrolled in the corresponding. Conversely, a decrease in the registered families shows a decrease in student enrollment. There is a strong correlation between the increase in Catholic families and the decrease in the subsidy to the Catholic elementary school. Additionally, the more students who enroll in the schools, the lower the subsidy from the parish.

Recommendations

It is recommended that future studies include a larger number of schools tested. It is recommended that additional financial data be included to assess the organizational health of the diocesan schools in an effort to increase enrollment.

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