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Analyzing the Impact of County Radon Levels and Population Size on the Allocation of the State Indoor Radon Grant (SIRG) Funds

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ANALYZING THE IMPACT OF COUNTY RADON LEVELS AND POPULATION SIZE ON THE ALLOCATION OF THE STATE INDOOR RADON GRANT (SIRG) FUNDS

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ABSTRACT

ANALYZING THE IMPACT OF COUNTY RADON LEVELS AND POPULATION SIZE ON THE ALLOCATION OF THE STATE INDOOR RADON GRANT (SIRG) FUNDS

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This thesis examines the SIRG program's effectiveness to target funds to states with the highest risk potential, based on county radon levels and population size. The primary method of determining the program's effectiveness was an analysis of the program's allocation of funds at a regional as well as a state level. The analysis focused on two of four input variables that the EPA utilizes in its regional allocation model (e.g., county radon levels and population size).

The analysis showed that the state-level allocation of funds is only marginally related to a combination of county radon levels and population size, while the regional allocation of funds is primarily related to a combination of these variables. An important distinction between the two allocation models was that the state-level funding includes a matching requirement of at least 40%, whereas the regional funding does not require any matching. The program's dependency on the ability and willingness of state legislators to fulfill this matching requirement diminishes the effectiveness of targeting states with the highest risk potential.

The Designated Thesis Committee Approves the Thesis Titled

ANALYZING THE IMPACT OF COUNTY RADON LEVELS AND POPULATION SIZE ON THE ALLOCATION OF THE STATE INDOOR RADON GRANT (SIRG) FUNDS

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Chapter 1 Introduction

The State Indoor Radon Grant (SIRG) program was established in 1988 and is administered by the U.S. Environmental Protection Agency (EPA). The program's major objectives are to assess indoor radon levels, increase public awareness of radon, and to reduce health risks associated with indoor radon (Marcinowski, 1995). The program annually provides around 8 million dollars, which is distributed to the regional officers of the 10 EPA regions (Figure 1). The regional officers then redistribute these funds among the states located within their respective regions.

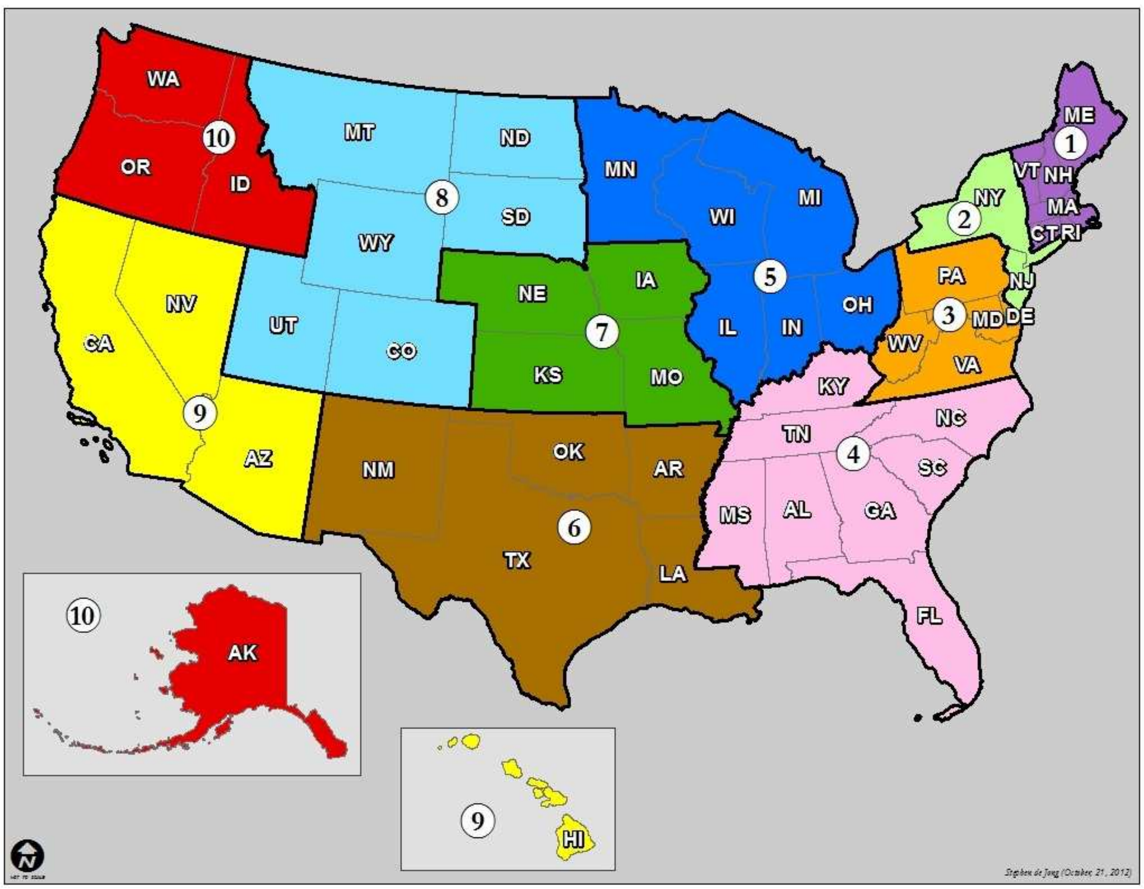

Figure 1. Map of EPA Regions (excluding overseas territories)

The state agencies receive funding based on project proposals. Once projects are approved by the EPA, grants are usually only allocated if the respective state can match the EPA grant amount by a minimum of 40%. Typically, these grants are put to use on state-level programs, such as education, training, or radon awareness programs. A small portion of the funds is sometimes further allocated to counties, cities, or nonprofit organizations (U.S. Environmental Protection Agency [EPA], 2005).

In 1995, the EPA's strategy for its radon program was to focus resources and initiatives aimed at targeting the greatest risk areas and populations. Examples of then recently completed and ongoing activities included: "developing and releasing the Map of Radon Zones, and targeting State Indoor Radon Grant (SIRG) funds to highest risk geographic areas and populations" (Marcinowski, 1995, p. I-2.8). Later, the EPA started creating models each year, on which the allocation of SIRG funds was to be based. Inputs to the formula of these models included population size, distribution of county radon zone designations, smoking rates, and a state's success in previous years of the SIRG program. However, the EPA points out that these models do not affect the SIRG application or award process. They only apply to the regional allocation of funds and not to the state-level allocation of funds (EPA, 2005).

Likely, the SIRG program will cease to exist in 2013. Due to the current federal budget crisis, President Obama's budget proposal for fiscal year 2013 includes substantial cutbacks in environmental protection programs, which includes the elimination of funding for the SIRG program altogether. As a result, the overall EPA budget for radon would drop from $8 million to $2 million (EPA, 2012b).

This thesis examines the SIRG program's effectiveness of targeting funds to states with the highest risk potential, based on county radon levels and population size. The fact that no models are applied to the state allocation of funds implies that some degree of randomness is involved in the distribution. The question therefore arises whether the EPA is still able to effectively target SIRG funds to the greatest risk areas and populations. The primary method of determining the program's effectiveness was an analysis of the program's allocation of funds. The analysis focused on two of four input variables that the EPA utilizes in its regional model (e.g., county radon levels and population size). At a regional as well as a state level, this thesis analyzes whether the SIRG funds are indeed significantly impacted by county radon levels and population size.

Chapter 2 Literature Review

Radon is a radioactive gas released from the natural decay of uranium in rocks and soil. It is an invisible, odorless, tasteless gas that seeps up through the ground and diffuses into the air. The gas is present in all 50 of the United States and usually exists at very low levels outdoors. However, it can also enter homes through cracks in floors, walls, or foundations (EPA, 2012a). Radon can pose serious health risks when inhaled over a long period of time. It is the second leading cause of lung cancer and is attributed to the death of an estimated 15,000 to 22,000 Americans each year (National Research Council, 1999). The presence of indoor radon does not display any immediate symptoms. Typically, problems do not surface until years of exposure to radon. The only way to determine indoor radon levels is through testing.

Obtaining accurate information on indoor radon levels is extremely important to radon officials and researchers. Currently, the most used and readily available map of indoor radon levels is the "EPA Map of Radon Zones" (Figure 2). The EPA developed the map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes (Marcinowski, 1995). The map assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L (pico curies per liter)
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L

Since potential radon levels are based on county averages, the EPA warns that these figures are by no means to be used as an indicator for radon levels at specific locations. Many thousands of individual homes with elevated (e.g., zone 1) radon levels can be found in zone 2 as well as in zone 3 (EPA, 2004b).

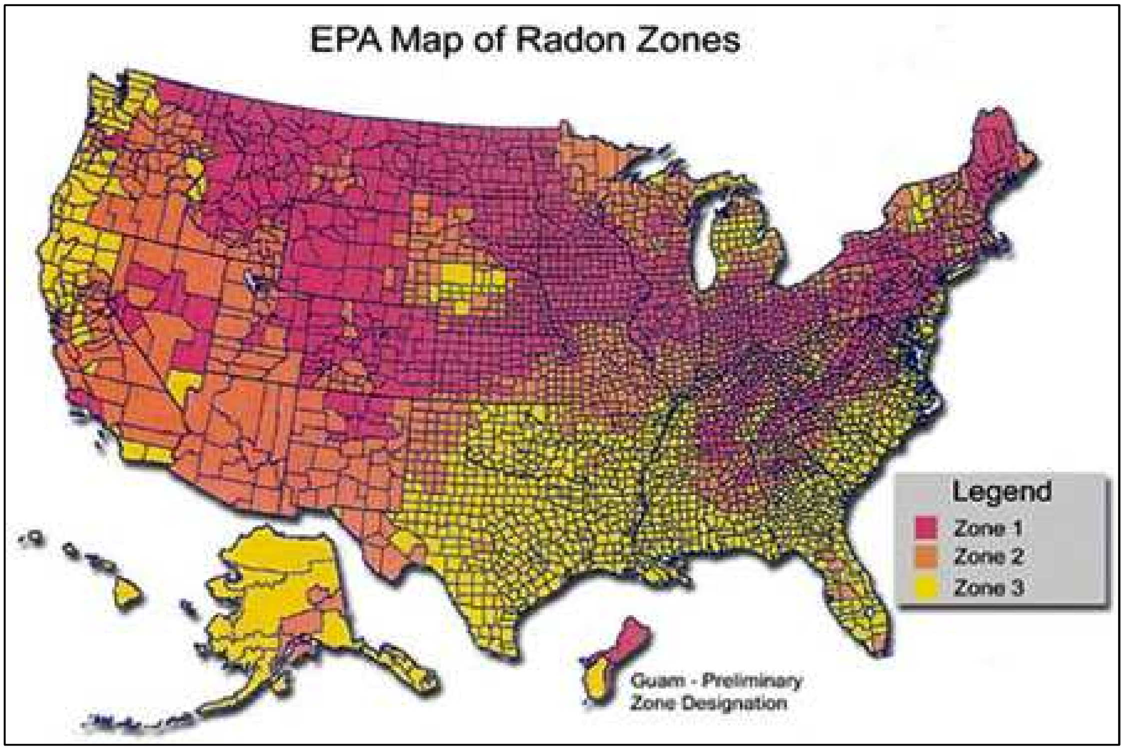

Figure 2. EPA Map of Radon Zones (EPA, 2004a)

Much larger scale and more detailed maps than the "EPA Map of Radon Zones" are necessary to more accurately identify residential radon levels (Christensen & Rigby, 1995; Nielson, Holt, & Rogers, 1995; Price, Nero, & Boscardin, 1993). Christensen and Rigby (1995) reported that due to a lack of accurate local radon level data, the State of Nevada in conjunction with the Nevada Bureau of Mines and Geology implemented a comprehensive program to acquire more detailed radon data in Nevada. The methods used were a survey that tested indoor radon levels in 2,500 homes and a program that included remote sensing technologies to measure outdoor radon levels. Nielson et al. (1995) also found that new approaches are needed to more accurately and more easily map indoor radon levels. The methodology they described is a model that calculates potential indoor radon levels based on the top 5 meters of surface soil on which a house is built. According to Price et al. (1993) the most significant predictive factors on residential radon levels are:

1. Living in the Northern United States.
2. Having a basement that is used as living space.
3. Living in an area with soil or bedrock that has an extremely high radium concentration.
4. Living in an area with very high soil permeability.

Having detailed what radon is, how radon is measured, what the SIRG program is, and how the EPA allocates the SIRG funds, the next step is to analyze whether the funding is indeed related to county radon levels and population size. The next chapter describes the methodology used in this research.

Chapter 3 Methodology

Data Acquisition and Assumptions

The following 3 types of secondary data were obtained from the U.S. Census Bureau and the U.S. Environmental Protection Agency for the 10 EPA regions as well as the 50 states plus the District of Columbia:

1. SIRG funding (EPA, 2011)
2. County radon levels (EPA, 2004a)
3. County population sizes (U.S. Census Bureau, 2010)

The research focused on the fiscal years 2002 through 2008 of the SIRG program, which covers 7 out of 23 (or 30%) of the program's completed fiscal years.

At a first glance, this research included only 3 variables: SIRG funding, county radon levels, and population size. One of the constraints, however, was that the county radon level data are ordinal, which is a qualitative measurement (e.g., zone 1, zone 2, and zone 3). This meant that no state and regional averages of the county radon levels could be obtained, since no arithmetic can be applied to qualitative data. In order to incorporate an ordinal variable into multiple regression analysis, the variable needed to be transformed into a quantitative variable. This was achieved by using the frequency, which is the number of counties with respectively zone 1, zone 2, and zone 3 radon levels for each EPA region and state. As a result, this research used 5 variables, which are defined as follows:

- x_1 is the number of counties per EPA region or state with zone 1 radon levels. Zone 1 radon levels are considered high, which means a predicted average indoor radon screening level greater than 4 pCi/L.

- x_2 is the number of counties per EPA region or state with zone 2 radon levels. Zone 2 radon levels are considered medium, which means a predicted average indoor radon screening level between 2 and 4 pCi/L.
- x_3 is the number of counties per EPA region or state with zone 3 radon levels. Zone 3 radon levels are considered low, which means a predicted average indoor radon screening level less than 2 pCi/L.
- x_4 is the population size of an EPA region or state during a particular fiscal year.
- Y is the dollar amount per fiscal year allocated through the SIRG program to an EPA region or state.

The analysis was divided into two parts. The first part includes an analysis of the regional funding and the second part includes an analysis of the state-level funding. This distinction was made because the SIRG funding is actually allocated twice before reaching the states. First, staff at the EPA headquarters in Washington D.C. allocates the funding to the 10 official EPA regions. Next, the EPA region coordinators allocate the funding to the respective states within their region (Figure 3). Therefore the possibility exists that one part of the allocation of SIRG funds may be related to county radon levels and population size, whereas the other part may not be related to these variables.

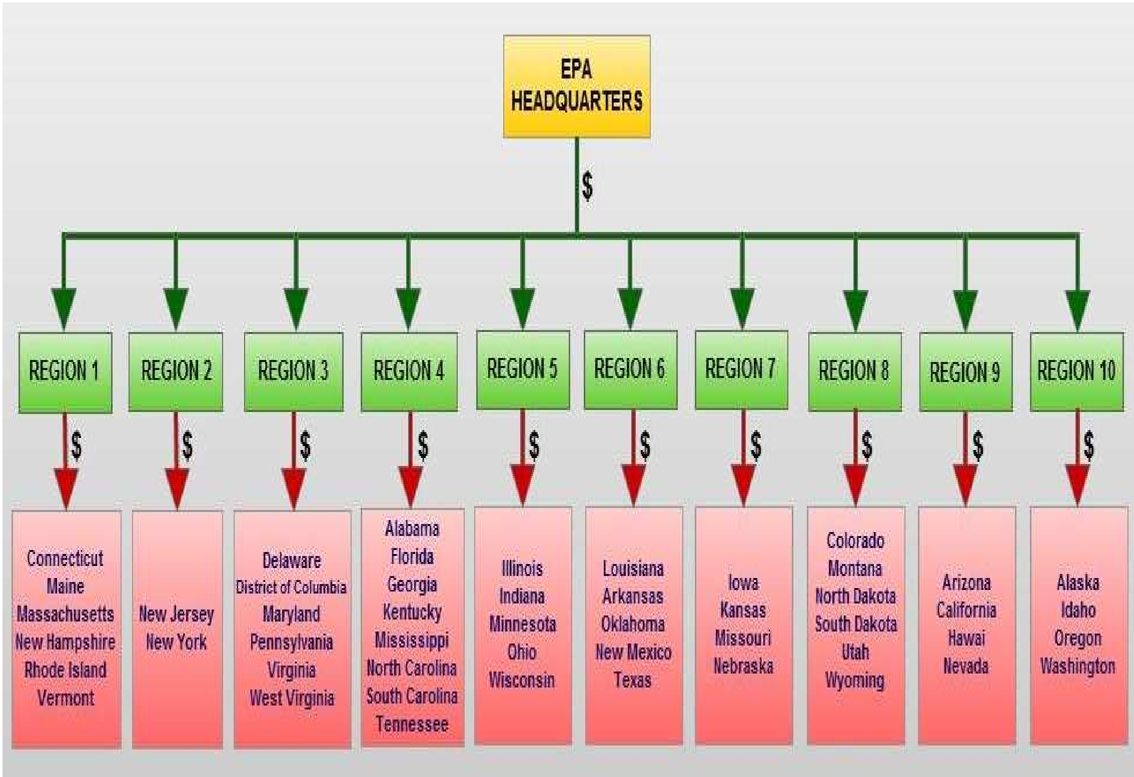

Figure 3. Allocation of SIRG Funds

Multiple Linear Regression Analysis

This research used the standard multiple linear regression analysis to determine whether county radon levels and population size have a significant influence on the level of SIRG funding. SIRG funding was selected as the dependent variable and population size and the number of counties with respectively high, medium, and low radon levels were selected as the independent variables. Standard multiple linear regression was chosen, since initial observations did not indicate that any of the independent variables would have a higher impact on the dependent variable. The same multiple regression model was used to determine the effect of the independent variables on the dependent variable for each of the 7 observed fiscal years:

$$Y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + e$$

Where,

- Y = SIRG funding
- x_1 = Number of counties with zone 1 (high) radon levels
- x_2 = Number of counties with zone 2 (medium) radon levels
- x_3 = Number of counties with zone 3 (low) radon levels
- x_4 = Population size
- b_0, b_1, b_2, b_3, b_4 = Regression coefficients
- e = Random error

Testing the Model for Assumptions

Regression models are most effective at identifying relationships between a combination of independent variables and a dependent variable when its underlying assumptions are satisfied. This research used five principal assumptions which justify the use of a multiple linear regression model for purposes of prediction and estimation:

1. Linearity
2. Homoscedasticity
3. Normality
4. Autocorrelation
5. Multicollinearity

If any of these assumptions is violated, the regression model may be (at best) inefficient or (at worst) seriously biased or misleading.

Testing the Model for Significance

In order to determine whether the independent variables had a significant impact on the dependent variable, the *F*-test and *t*-test were applied to each of the models. The *F*-test was used to examine the relationship between the dependent variable and the set of independent variables, and the *t*-test was used to examine the relationship of each individual independent variable with the dependent variable. The value of *F* was obtained through the ANOVA calculation in SPSS, and the value of *t* was obtained from the coefficients table calculated in SPSS.

The Model Coefficients

The partial regression coefficients of the model predict the amount by which the dependent variable increases when one independent variable is increased by one unit and all the other independent variables are held constant. This coefficient is called partial because its value depends, in general, upon the other independent variables. Specifically, the value of the partial coefficient for one independent variable will vary, in general, depending upon the other independent variables included in the regression equation. The partial regression coefficients were obtained from the coefficients table calculated in SPSS.

The multiple correlation coefficient is used in multiple regression analysis to assess the quality of the prediction of the dependent variable. It corresponds to the squared correlation between the predicted and the actual values of the dependent variable. The multiple correlation coefficient, which is usually represented by the letter *R*, estimates the combined influence of two or more independent variables on the dependent variable. The coefficient is:

- 0, if no relationship exists;
- 1, if a perfect positive correlation exists;
- –1, if a perfect negative correlation exists;
- Between 0 and 1, if some positive correlation exists;
- Between –1 and 0, if some negative correlation exists.

Lastly, the coefficient of determination (R^2) was analyzed. This coefficient shows how well a regression model fits the data. Its value ranges from 0 to 1, and represents the proportion of variation that can be explained by the regression equation. A value of 1 implies a perfect fit of the model to explain the variation, and a value of 0 implies the model does not explain the variation at all. The multiple correlation coefficient (*R*) and the coefficient of determination (R^2) were both obtained from the model summary calculated in SPSS.

Chapter 4 Regional Analysis

Result of Assumption Tests

Plotting each independent variable against the dependent variable provided insight into the linearity of the relationships. The independent variables "Number of counties with zone 1 (high) radon levels," "Number of counties with zone 2 (medium) radon levels," and "Population size" all showed a relatively strong positive linear relationship with the dependent variable "SIRG funding." The relationship between "Number of counties with zone 3 (low) radon levels" and "SIRG funding" proved to be the least linear. If anything, it displayed either a very weak negative linear relationship or no relationship at all. The relationships between the variables proved very similar for each observed fiscal year. Figure 4 shows the scatterplots for each independent variable with the dependent variable for FY 2002.

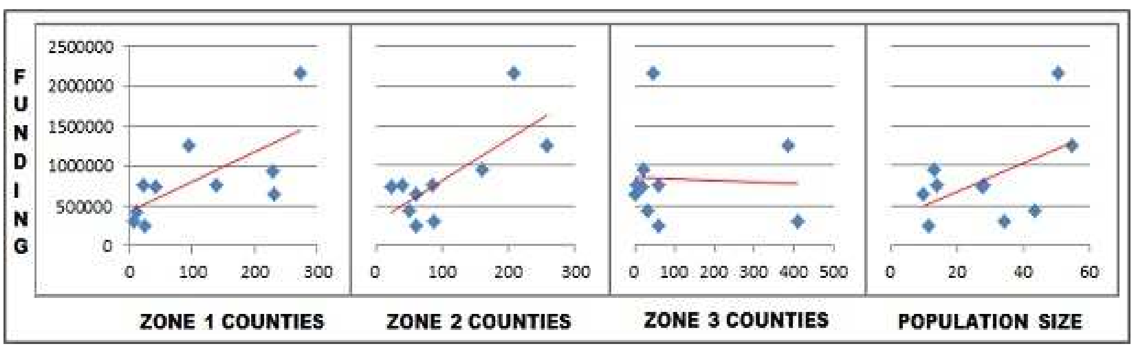

Figure 4. Regional Scatterplots for FY 2002

The residuals were plotted against the predicted value of the dependent variable for each fiscal year to assess the assumption of homoscedasticity. As illustrated in Figure 5, the data points of the plot for FY 2004 are randomly dispersed around the x-axis and do not form any obvious pattern. This means that the errors had constant variance and that the assumption of homoscedasticity was met. The scatterplots of the other fiscal years showed similar results.

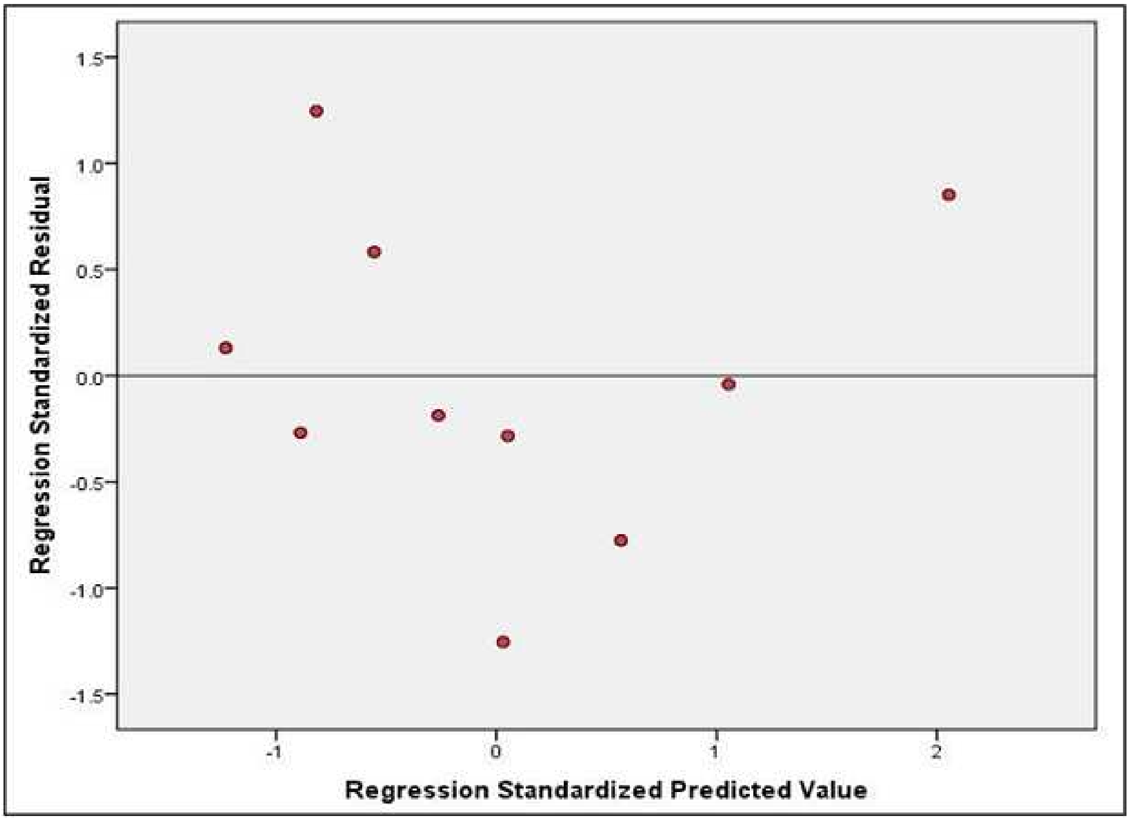

Figure 5. Regional Residual Plot for FY 2004

A histogram and P-P plot of the residuals (predicted minus observed values) were created in SPSS to test for normality of the error term. In order to pass this normality test, the P-P plotted residuals should closely follow the diagonal or 45 degree reference line, and the shape of the histogram should approximately follow the shape of the normal (bell) curve. The regression models for all 7 fiscal years passed the normality test and showed very similar results. Figure 6 displays the P-P plot and histogram of the residuals for FY 2006. The graphic examples illustrate quite well that the data points of the P-P plot closely follow the diagonal line and that the shape of the histogram closely matches the shape of the normal (bell) curve.

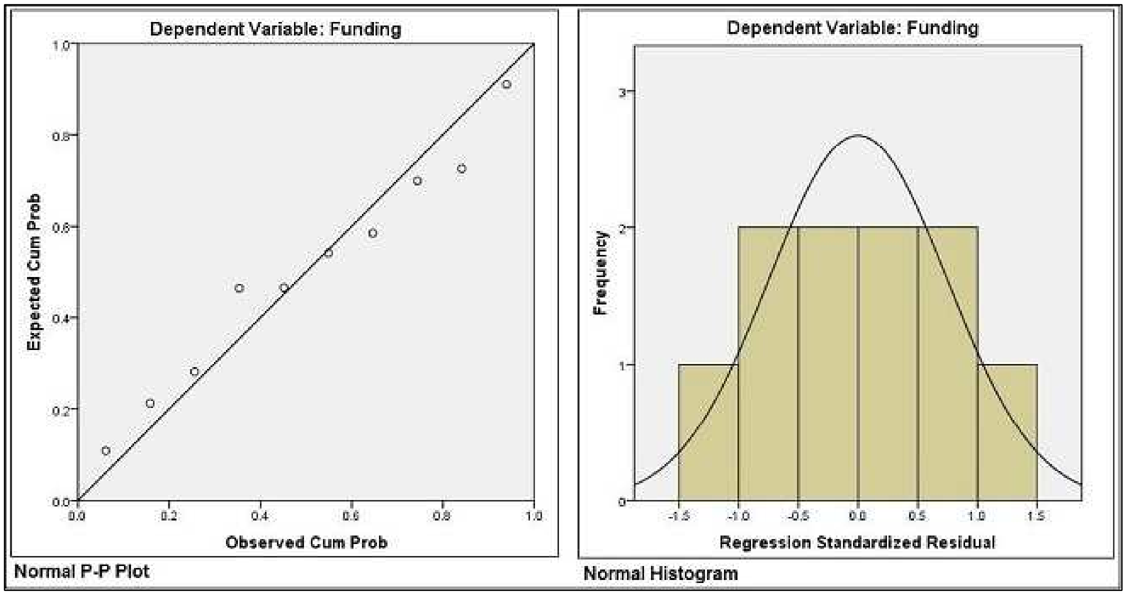

Figure 6. Regional Normal P-P Plot and Histogram of the Residuals for FY 2006

The Durbin-Watson test statistic was analyzed to test for autocorrelation. All 7 regression models in the regional part of the analysis included a sample size of 10 (e.g., 10 EPA regions) and 4 explanatory variables (e.g., “Number of counties with zone 1 (high) radon levels,” “Number of counties with zone 2 (medium) radon levels,” “Number of counties with zone 3 (low) radon levels,” and “Population size”). With N = 10 and k□ = 4, the Durbin-Watson table at the 5% significance level showed dL = 0.376 and dU = 2.414 (Anderson, Sweeney, & Williams, 1997, p. B-28). These are the critical values of the Durbin-Watson test statistic, with dL being the lower bound and dU the upper bound.

Table 1 shows that all Durbin-Watson test statistics were between the lower and upper bound (0.376 and 2.414 respectively), which means that the test was inconclusive regarding the existence of autocorrelation in any of the regression models. However, the existence of autocorrelation was highly unlikely, since no time series was involved, as all of the regression models in this research applied to only one fiscal year.

Table 1. Regional Durbin-Watson Test Statistics

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Durbin-Watson Test Statistic	1.07	1.59	1.17	0.84	0.81	1.13	0.88

The regression model for each of the fiscal years proved to be free of multicollinearity. As shown in Table 2 and Table 3, the tolerance measure of each explanatory variable was consistently higher than 0.2, and the VIF values were consistently less than 10. The variable with the highest multicollinearity was "Number of counties with zone 2 (medium) radon levels." With values consistently around 4.5, the variable easily met the VIF requirement, but with a tolerance value of 0.22 in each fiscal year, it just barely met the tolerance requirement. The variable "Population size" had the lowest multicollinearity. Its tolerance value was consistently around 0.5, and its VIF value was close to 2 in each fiscal year. The conclusion is that the model passed the test for multicollinearity in each of the observed fiscal years, since all the SPSS calculated values for tolerance and VIF met the requirements.

Table 2. Regional Tolerance Values

	2002	2003	2004	2005	2006	2007	2008
# Zone 1 Counties	0.32	0.32	0.32	0.32	0.32	0.32	0.32
# Zone 2 Counties	0.22	0.22	0.22	0.22	0.22	0.22	0.22
# Zone 3 Counties	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Population Size	0.50	0.50	0.50	0.49	0.48	0.48	0.47

Table 3. Regional VIF Values

	2002	2003	2004	2005	2006	2007	2008
# Zone 1 Counties	3.09	3.10	3.11	3.12	3.13	3.13	3.13
# Zone 2 Counties	4.51	4.51	4.52	4.54	4.56	4.56	4.55
# Zone 3 Counties	2.59	2.59	2.59	2.59	2.59	2.60	2.60
Population Size	1.99	2.00	2.02	2.04	2.07	2.10	2.11

Result of Significance Tests

The critical value of F was approximately 5.19 for a 95% confidence interval (Anderson et al., 1997, p. B-6). Since all fiscal years had identical regression and error in the degrees of freedom, the critical value of F could be applied to the models of all observed fiscal years. Table 4 demonstrates that the F values of all fiscal years except FY 2003 were greater than the critical F value of 5.19.

Table 4. Regional *F*-Values

	2002	2003	2004	2005	2006	2007	2008
***F*-value**	6.09	3.90	5.31	6.35	5.45	5.24	5.59

Therefore, the conclusion is that in each fiscal year except FY 2003, the set of independent variables was indeed related to the dependent variable. However, for FY 2003 the null hypothesis was accepted as *F* was only 3.90, which is less than the critical value of *F*. The same conclusion is made from the significance test values of *p* in the SPPS calculated ANOVA. The value *p* needed to be less than 0.05 for a 95% confidence interval in order for the model to be significant. As shown in Table 5, *p* was less than 0.05 for each fiscal year except for FY 2003.

Table 5. Regional *p*-Values

	2002	2003	2004	2005	2006	2007	2008
***p*-value**	0.037	0.084	0.048	0.034	0.046	0.049	0.043

The critical values for *t* were –2.57 and 2.57 for a 95% confidence interval (Anderson et al., 1997, p. B-3). Table 6 demonstrates that the *t* values for all independent variables in each fiscal year were within the lower and upper bound of the critical *t* value (-2.57 and 2.57 respectively), which means that all variables failed the *t*-test. Therefore, the conclusion is that none of the independent variables individually had a significant relationship with the dependent variable. The same conclusion is made from the coefficients table processed in SPSS. The significance test value *p* was greater than 0.05

for all of the individual independent variables in each fiscal year for a 95% confidence interval.

Table 6. Regional *t*-Values

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
# Zone 1 Counties	0.97	0.40	0.63	0.78	0.33	0.48	0.39
# Zone 2 Counties	1.25	1.33	1.38	1.49	1.62	1.22	1.45
# Zone3 Counties	-1.42	-1.36	-1.51	-1.41	-1.16	-1.20	-1.27
Population Size	1.76	1.29	1.60	1.65	1.51	2.01	1.86

Based on the significance test results obtained from the *F*-test and the *t*-test, the conclusion is that the independent variables were related to the dependent variable collectively but not individually. Thus, the model was significant, but the individual relationships between the dependent and the independent variables were not significant. The exception was FY 2003, where neither the model nor the relationships between the variables were significant.

Interpreting the Model

Table 7 shows the partial regression coefficients for the regression models of each observed fiscal year. These coefficients were obtained from the individual coefficient tables in SPPS. Even though the *t*-test revealed that no statistically significant relationship existed between the dependent variable and any of the independent variables individually, the coefficients were still useful to further interpret each of the regression models.

Table 7. Regional Partial Regression Coefficients

	2002	2003	2004	2005	2006	2007	2008
Constant	2,191	-74,318	-44,295	61,108	79,248	36,152	29,529
# Zone 1 Counties	1,703	1,038	1,290	1,327	562	831	685
# Zone 2 Counties	3,497	5,489	4,476	4,041	4,428	3,367	4,062
# Zone3 Counties	-1,518	-2,138	-1,857	-1,447	-1,197	-1,253	-1,352
Population Size	0.015	0.016	0.016	0.013	0.012	0.016	0.015

The regression models for each of the fiscal years were derived from the data in Table 7. The following is an example of the regression model for FY 2008:

$$Y = 29{,}529 + 685\, x_1 + 4{,}062\, x_2 - 1{,}352\, x_3 + 0.015\, x_4$$

Where,

- Y = SIRG funding
- x_1 = Number of counties with zone 1 (high) radon levels
- x_2 = Number of counties with zone 2 (medium) radon levels
- x_3 = Number of counties with zone 3 (low) radon levels
- x_4 = Population size

For FY 2008, the model can be interpreted as follows:

- A constant (α) of 29,529 means that if all of the independent variables are equal to zero, then the variable "SIRG funding" (Y) will increase by $29,529;
- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable "Number of counties with zone 1 (high) radon levels" (x_1) will result in an average increase of $685 in "SIRG funding" ($Y$);
- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable "Number of counties with zone 2

(medium) radon levels" (x_2) will result in an average increase of $4,062 in "SIRG funding" (Y);

- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable "Number of counties with zone 3 (low) radon levels" (x_3) will result in an average decrease of $1,352 in "SIRG funding" (Y);
- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable "Population size" (x_4) will result in an average increase of $0.015 in "SIRG funding" (Y).

The coefficient of determination is identified by R^2, which is the correlation coefficient quadrate. R^2 explains the total variation in the dependent variable caused by all the independent variables combined. As shown in Table 8, the R^2 for FY 2002 was 0.83. This means that 83% of the variation in the dependent variable "SIRG funding" was caused by the independent variables "Number of counties with zone 1 (high) radon levels", "Number of counties with zone 2 (medium) radon levels," "Number of counties with zone 3 (low) radon levels," and "Population size." The remaining 17% of the variation in "SIRG funding" was caused by factors that weren't represented in the model. The models for the other fiscal years showed very similar results with all of them having coefficients of determination between 0.81 and 0.84. The coefficient of determination for FY 2003 was ignored, since the model for FY 2003 did not pass the *F*-test and *p* was greater than 0.05 for the 95% confidence interval.

Table 8. Regional Coefficients of Determination (R^2)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
p	0.037	0.084	0.048	0.034	0.046	0.049	0.043
R²	0.83	0.76	0.81	0.84	0.81	0.81	0.82

Discussion

The multiple regression analysis at the regional level demonstrated that the independent variables had a significant combined effect on the dependent variable "SIRG funding." Individually, however, these variables did not have a significant effect on "SIRG funding." Since the coefficients of determination had values greater than 0.8 for the 6 significant models, this indicates that less than 20% of "SIRG funding" was attributed to variables other than county radon levels and population size. Therefore, the conclusion is that the regional allocation of funds for the 6 significant models was indeed predominantly based on county radon levels and population size.

An interesting observation was that the model for FY 2003 was the only model that failed the significance test. To better understand why this was the case, a comparison of the values for the variables "Population size" and "SIRG funding" was made for each of the observed fiscal years. The variables regarding the number of counties with respectively low, medium, and high radon levels were not more closely examined, as the values of these variables remained constant throughout the 7 observed fiscal years. Figure 7 shows the population size per EPA region for each fiscal year and Figure 8 shows the SIRG funding amount per EPA region for each fiscal year.

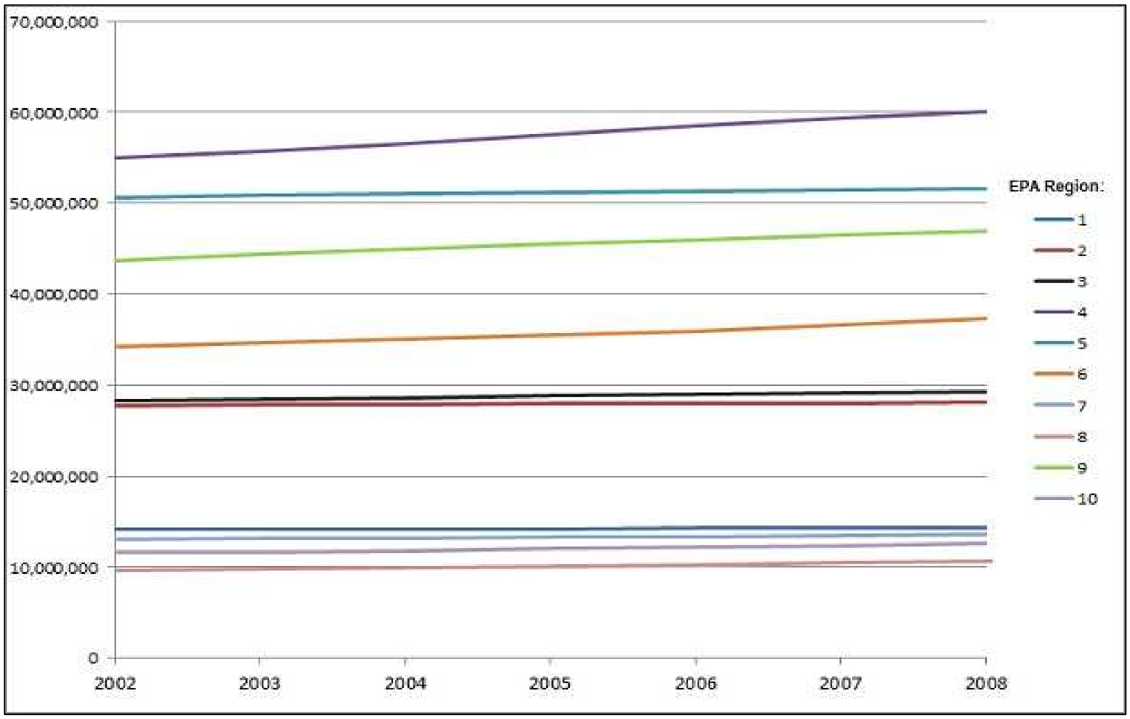

Figure 7. Population Size per EPA Region from 2002 to 2008

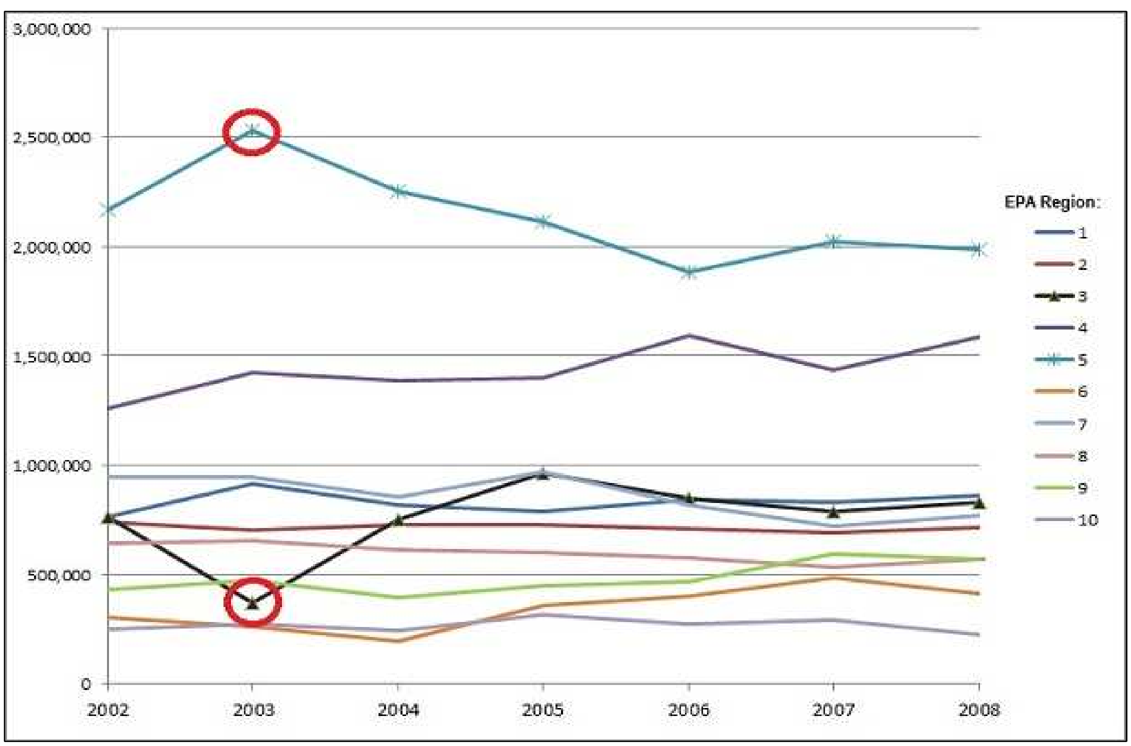

Figure 8. SIRG Funding per EPA Region from 2002 to 2008

The population growth from 2002 to 2008 for each EPA region was very linear, as demonstrated in Figure 7. The growth in 2003 did not exhibit significant increase or decrease in population size for any of the 10 EPA regions. Therefore, the variable “Population size” was unlikely the primary contributing factor for the FY 2003 regression model to fail the significance test.

Figure 8, however, does point out 2 very obvious outliers. These outliers are highlighted by the circles on the graph. Both outliers demonstrate a significant change in allocation of SIRG funds for FY 2003 for EPA regions 3 and 5. EPA region 3 received $392,254 or 51% less funding in FY 2003 than the previous fiscal year, and EPA region 5 received $360,000 more in FY 2003. Sequentially, the funding for EPA region 3 in FY 2004 increased by $381,000 or 45%, and the funding for EPA region 5 decreased by $278,000 in FY 2004. The state-level allocation of funds needed to be examined to evaluate why the allocation of SIRG funding for EPA regions 3 and 5 was substantially different in FY 2003. This step is described in the next chapter.

Chapter 5 State-Level Analysis

Result of Assumption Tests

Compared to the regional analysis, the state-level relationships exhibited significantly more scatter. The only meaningful strong relationship at the state-level was the relationship between the independent variable "Number of counties with zone 1 (high) radon levels" and the dependent variable "SIRG funding." The relationship between "Number of counties with zone 2 (medium) radon levels" and "SIRG funding" proved to be the least linear. If anything, it displayed either a very weak positive linear relationship or no relationship at all. Figure 9 shows the scatterplots for each independent variable with the dependent variable for FY 2002.

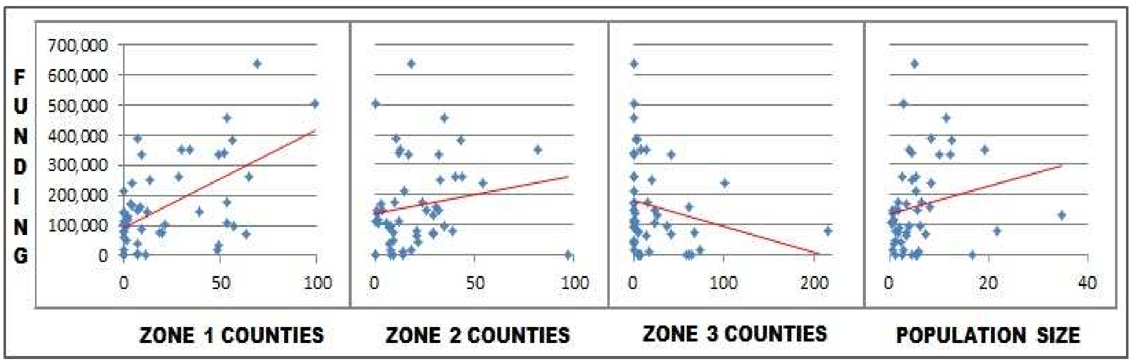

Figure 9. State-Level Scatterplots for FY 2002

The fact that several states did not participate in the SIRG program and therefore did not receive funding certainly contributed to the scatter. In FY 2002, 6 states did not participate in the program (e.g., Arkansas, Florida, Hawaii, Louisiana, Maryland, and Missouri). The relationships became significantly stronger when these states were excluded from the scatterplots (Figure 10). For example, Florida is the 4th largest populated state, yet it received no funding in FY 2002. The relationship between

“Population size” and “SIRG funding” became stronger and the slope of the trend line was positively impacted when this state was excluded from the scatterplots. Nonetheless, the analysis needed to include these non-participating states, since this research examined the distribution of SIRG funds throughout the United States and not just the participating states. The fact that not all states participate in the SIRG program may prove to be a flaw in the EPA’s funding distribution model.

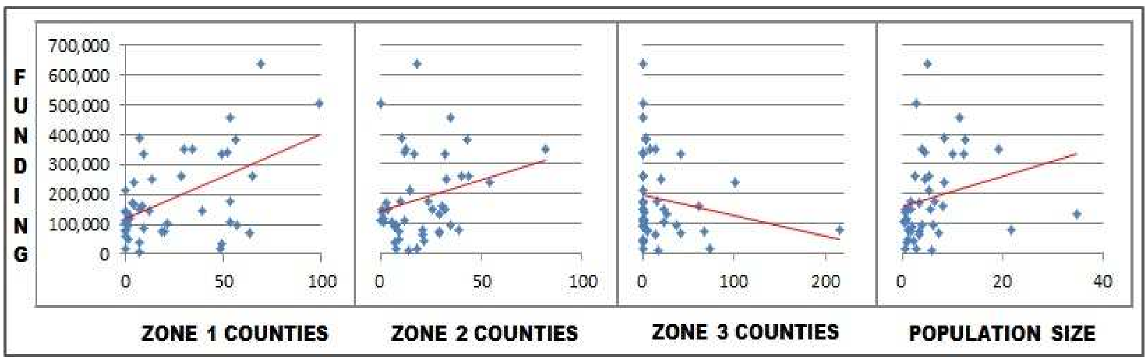

Figure 10. Scatterplots for Participating States in FY 2002

The residuals were plotted against the predicted value of the dependent variable for each fiscal year to assess the assumption of homoscedasticity. As was the case with the regional analysis, the regression models of all 7 fiscal years passed the test. Figure 11 illustrates that the data points of the plot for FY 2004 are randomly dispersed around the x-axis and do not form any obvious pattern. The scatterplots of the other fiscal years showed very similar results.

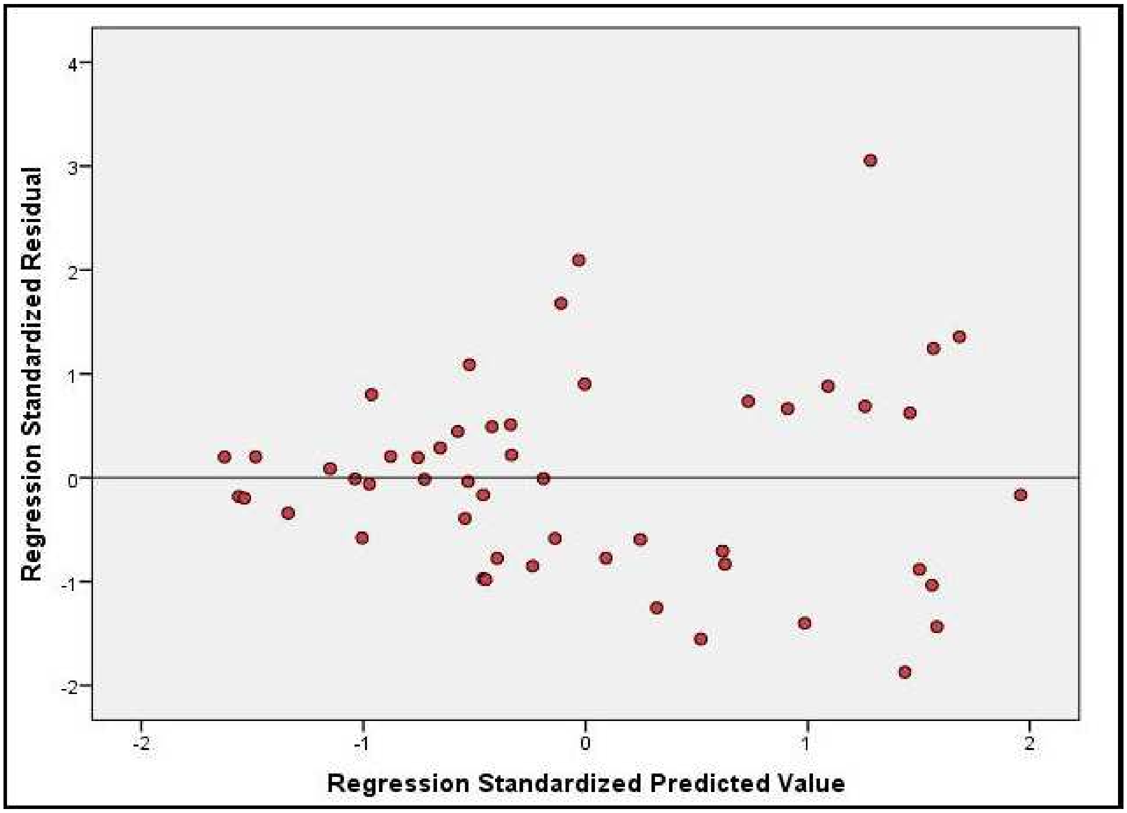

Figure 11. State-Level Residual Plot for FY 2004

The regression models for all 7 observed fiscal years passed the normality test. Figure 12 displays the P-P plot and histogram of the residuals for FY 2006. The graphic examples of Figure 12 demonstrate that the data points of the P-P plot closely follow the diagonal line and that the shape of the histogram closely matches the shape of the normal (bell) curve. The P-P plots and histograms of the other fiscal years showed very similar results.

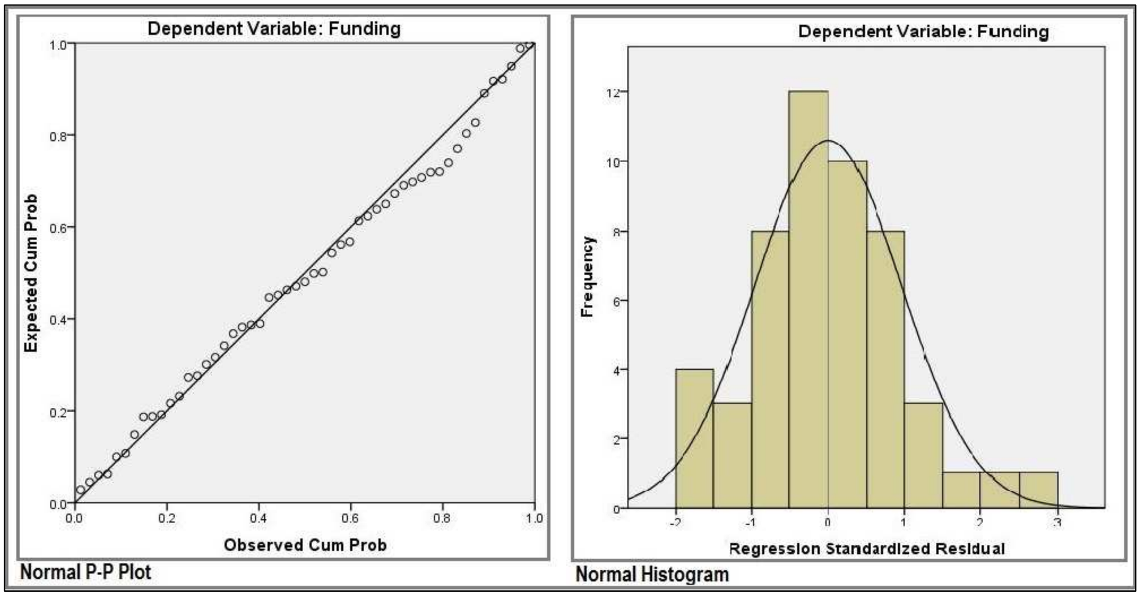

Figure 12. State-Level Normal P-P Plot and Histogram of the Residuals for FY 2006

Similar to the regional analysis, the existence of autocorrelation in any of the state-level models was highly unlikely, as each of the models related to only one fiscal year. The sample size for each model in the state analysis was 51 (e.g., 50 states and the District of Columbia), and each model included 4 explanatory variables. With N = 51 and k□ = 4, the Durbin-Watson table at the 5% significance level showed dL = 1.38 and dU = 1.72 (Anderson et al., 1997, p. B-28). Table 9 shows the Durbin-Watson test statistics for each fiscal year. Since all test statistics were greater than 1.72 (dU) and less than 2.28 (4 – dU), the conclusion is that no significant autocorrelation existed in any of the models.

Table 9. State-Level Durbin-Watson Test Statistics

	2002	2003	2004	2005	2006	2007	2008
Durbin-Watson Test Statistic	1.866	1.782	1.741	1.851	1.755	1.947	1.780

The regression model for each of the fiscal years in the state-level analysis proved to be free of multicollinearity. As demonstrated in Table 10 and Table 11, the tolerance measure of each explanatory variable was consistently higher than 0.2 and the VIF values were consistently less than 10.

Table 10. State-Level Tolerance Values

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
# Zone 1 Counties	0.86	0.87	0.87	0.87	0.87	0.87	0.87
# Zone 2 Counties	0.90	0.90	0.90	0.90	0.90	0.90	0.90
# Zone 3 Counties	0.73	0.73	0.73	0.73	0.72	0.72	0.72
Population Size	0.79	0.79	0.78	0.78	0.77	0.77	0.76

Table 11. State-Level VIF Values

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
# Zone 1 Counties	1.16	1.16	1.16	1.16	1.16	1.16	1.16
# Zone 2 Counties	1.11	1.11	1.11	1.11	1.11	1.11	1.11
# Zone 3 Counties	1.36	1.36	1.37	1.37	1.38	1.39	1.40
Population Size	1.27	1.27	1.28	1.28	1.29	1.30	1.31

Result of Significance Tests

The critical value of F was approximately 2.58 for a 95% confidence interval (Anderson et al., 1997, p. B-6). Since all fiscal years had identical regression and error in the degrees of freedom, the critical value of F could be applied to the models of all observed fiscal years. Table 12 demonstrates that the F values of all fiscal years were greater than the critical *F* value of 2.58. Therefore, the conclusion is that in each fiscal year the set of independent variables was indeed related to the dependent variable.

Table 12. State-Level *F*-Values

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
***F*-value**	7.06	4.08	6.48	8.24	6.82	6.77	5.57

However, a slightly different conclusion is made from the *p*-values obtained from the SPPS calculated ANOVA. The value *p* needed to be less than 0.05 for a 95% confidence interval in order for the model to be significant. As shown in Table 13, *p* was less than 0.05 for each fiscal year except for FY 2003. In FY 2003, *p* was 0.07, which means the model was not significant.

Table 13. State-Level *p*-Values

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
***p*-value**	0.00	0.07	0.00	0.00	0.00	0.00	0.01

The critical values of *t* were –2.01 and 2.01 for a 95% confidence interval (Anderson et al., 1997, p. B-3). This means that each of the independent variables with a *t*-value between -2.01 and 2.01failed the *t*-test and therefore did not have a significant individual relationship with the dependent variable. Table 14 shows the *t*-values for all the independent variables of each observed fiscal year.

Table 14. State-Level *t*-Values

	2002	2003	2004	2005	2006	2007	2008
# Zone 1 Counties	3.99	2.45	2.75	3.06	2.13	2.19	1.96
# Zone 2 Counties	0.48	1.57	2.00	1.98	1.81	1.79	2.00
# Zone3 Counties	-1.37	-1.50	-2.09	-2.58	-2.69	-2.02	-1.84
Population Size	2.08	0.98	1.88	2.35	2.88	3.24	2.61

The individual relationship between "SIRG funding" and "Number of counties with zone 2 (medium) radon levels" proved never to be significant, since the *t*-values were consistently between -2.01 and 2.01. However, the individual relationship between "SIRG funding" and "Number of counties with zone 1 (high) radon levels" proved to be significant for 6 out of 7 fiscal years. The exception was FY 2008, since the *t*-value was 1.96, which is between -2.01 and 2.01.

Based on the significance test results obtained from the *F*-test and the *t*-test, the conclusion is that the independent variables were related to the dependent variable collectively but not necessarily individually. Thus, the model was significant, but only some of the individual relationships between the dependent and the independent variables were significant. The exception was FY 2003, because this was the only fiscal year in which the model was not statistically significant, since p was greater than 0.05.

Interpreting the Model

Table 15 shows the partial regression coefficients of the regression models for each observed fiscal year. These coefficients were obtained from the individual coefficient tables in SPPS. Even though the *t*-test revealed that some of the individual relationships between the dependent variable and the independent variables were not statistically significant, these coefficients were still useful to further interpret each of the regression models.

Table 15. State-Level Partial Regression Coefficients

	2002	2003	2004	2005	2006	2007	2008
Constant	71,570	79,940	70,502	74,239	84,779	76,207	79,944
# Zone 1 Counties	2,914	2,356	2,067	2,244	1,451	1,407	1,357
# Zone 2 Counties	439	1,876	1,883	1,812	1,539	1,437	1,732
# Zone3 Counties	-732	-1,061	-1,156	-1,396	-1,355	-961	-945
Population Size	.006	.004	.006	.007	.008	.008	.007

The regression models for each of the fiscal years were derived from the data in Table 15. The following is an example of the regression model for FY 2008:

$$Y = 79{,}944 + 1{,}357\ x_1 + 1{,}732\ x_2 - 945\ x_3 + 0.007\ x_4$$

Where,

- Y = SIRG funding
- x_1 = Number of counties with zone 1 (high) radon levels
- x_2 = Number of counties with zone 2 (medium) radon levels
- x_3 = Number of counties with zone 3 (low) radon levels
- x_4 = Population size

For FY 2008, the model can be interpreted as follows:

- A constant (α) of 79,944 means that if all of the independent variables are equal to zero, then the variable "SIRG funding" (Y) will increase by $79,944.

- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable “Number of counties with zone 1 (high) radon levels” (x_1) will result in an average increase of $1,357 in “SIRG funding” (Y).
- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable “Number of counties with zone 2 (medium) radon levels” (x_2) will result in an average increase of $1,732 in “SIRG funding” (Y).
- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable “Number of counties with zone 3 (low) radon levels” (x_3) will result in an average decrease of $945 in “SIRG funding” (Y).
- If all other independent variables remain constant or are equal to zero, an increase of one unit in the variable “Population size” (x_4) will result in an average increase of $0.007 in “SIRG funding” (Y).

Table 16 shows the coefficient of determination (R^2) values, calculated in SPSS, for all 7 observed fiscal years. The coefficient of determination explains the total variation in the dependent variable caused by all the independent variables combined. As shown in Table 16, the R^2 value for FY 2002 was 0.38. This means that 38% of the variation in the dependent variable “SIRG funding” was caused by the independent variables “Number of counties with zone 1 (high) radon levels,” “Number of counties with zone 2 (medium) radon levels,” “Number of counties with zone 3 (medium) radon levels,” and “Population size.” The remaining 62% of the variation in “SIRG funding” is caused by factors that weren’t represented in the model. The models for the other fiscal years showed similar results. FY 2005 had the highest coefficient of determination with $R^2 = 0.42$ and FY 2008 had the lowest coefficient of determination with $R^2 = 0.33$. The coefficient of determination for FY 2003 was ignored, since the model for FY 2003 was not statistically significant.

Table 16. State-Level Coefficients of Determination (R^2)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
p	0	0.07	0	0	0	0	0.01
R²	0.38	0.26	0.36	0.42	0.37	0.37	0.33

Discussion

Individually, some of the independent variables proved to have a significant relationship with the dependent variable "SIRG funding." The independent variable "Number of counties with zone 1 (high) radon levels" showed a significant positive effect on the level of funding in 6 of the 7 models, the independent variable "Population size" demonstrated a significant positive effect in 5 of the 7 models, and the independent variable "Number of counties with zone 3 (low) radon levels" showed a significant negative effect on the level of funding in 4 of the 7 models. However, the variable "Number of counties with zone 2 (medium) radon levels" never proved to have a significant impact on "SIRG funding." It failed the *t*-test in each observed fiscal year. In other words, an increase in the number of high level radon counties or an increase in population would likely increase the level of funding, whereas an increase in the number of low level radon counties would likely decrease the level of funding. A change in the number of medium level radon counties would likely not have a significant impact on the level of funding at all.

The combined effect of these independent variables at the state-level allocation of SIRG funds proved to be significant for 6 out of 7 models. Similar to the regional analysis, the model for FY 2003 was not significant. Even though 6 out of 7 models proved to be significant, the combined effect on "SIRG funding" was relatively low. The coefficients of determination for the significant models were between 0.33 and 0.42, which means that in each fiscal year more than 50% of the variation in “SIRG funding” was attributed to other factors.

This research examined the effect of county radon levels and population size on the EPA’s allocation of SIRG funds. A determination of what other factors could possibly influence the level of SIRG funding was not the objective of this research. However, the fact that the state allocation of funds requires matching funds and the regional allocation does not require any matching seems a very plausible explanation for the large discrepancies in the coefficients of determination between the 2 analyses.

Many states have difficulty fulfilling the 40% matching requirement of the SIRG funds. As a result, states with relatively high radon levels may receive proportionally low or no SIRG funding at all (Scheberle, 2004). For example, the State of Indiana has 57 high radon level counties and the State of Delaware has no high radon level counties at all. Furthermore, Indiana has over 6 times the population of Delaware. Yet, in each of the observed fiscal years, Delaware received more SIRG funding than Indiana. Scheberle (2004) continued to explain that radon fails to capture the attention of state legislators or congress, in large part because radon fails to command much public attention. As a result, radon is not a high priority budget item for most states. Scheberle (2004) also conducted interviews with several state radon coordinators, who confirmed that the matching requirement made it hard for various states to acquire sufficient SIRG funds.

This matching requirement may also explain why the model for FY 2003 in both the regional as well as the state-level analysis proved to be statistically insignificant. As pointed out in the regional analysis, EPA region 3 received significantly less funding in FY 2003 compared to the other fiscal years. The funding declined by $392,254 or 51% compared to FY 2002 and then increased again by $381,000 or 45% in FY 2004. Figure 13 shows the state allocation of funds for EPA region 3 for the observed fiscal years. The graph clearly illustrates that the State of Pennsylvania was the primary cause of region 3's decline in funding for FY 2003. It received $340,000 in FY2002, then nothing in FY 2003, and then $360,000 in FY 2004.

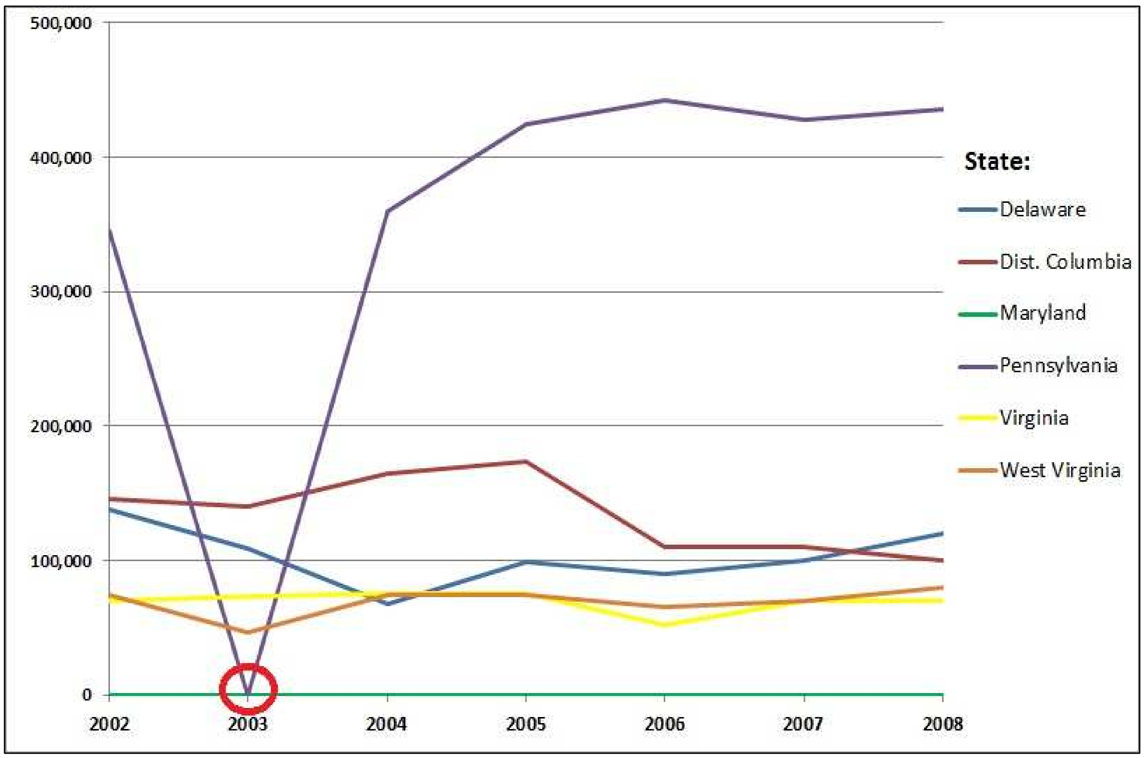

Figure 13. State SIRG Funding for EPA Region 3

The State of Pennsylvania faced a severe budget crisis in 2003. As a result the funding for environmental protection programs in Pennsylvania decreased from approximately $246 million in FY 2002/2003 to approximately $179 million in FY 2003/2004, which corresponds to a budget cut for environmental programs of over 27%

(Rendell, 2003). Likely, the 40% matching requirement of the SIRG program was part of these budget cuts.

As indicated at the beginning of this chapter, several other states (e.g., Arkansas, Florida, Hawaii, Louisiana, Maryland, Missouri, and Texas) also did not participate in the SIRG program during one or more of the observed fiscal years. For states such as Hawaii and Louisiana this is somewhat understandable, since neither state has any high or even medium level radon counties. However, states such as Maryland and Missouri have respectively 7 and 11 high level radon counties and respectively 8 and 97 medium level radon counties. Yet, Missouri did not participate in FY 2002 and Maryland never participated in the SIRG program during the observed fiscal years.

The Tables 17 and 18 show the SIRG funding per state for FY 2002. Table 17 shows the actual SIRG funding per state and Table 18 shows the funding each state was predicted to receive per the regression model for FY 2002 (e.g., $Y = 71{,}570 + 2{,}914\ x_1 + 439\ x_2 - 732\ x_3 + 0.006\ x_4$) . When the FY 2002 regression model is applied to Maryland and Missouri, Table 18 indicates that these states were predicted to receive respectively \$121,275 and \$175,168 in SIRG funding for FY 2002, yet in actuality they both received nothing in FY 2002. The predicted funding amounts move Maryland from rank 46 to 29 and Missouri from rank 46 to 19 in SIRG funds received for FY 2002.

Table 17. State SIRG Funding in FY 2002

Rank	State	Funding	Rank	State	Funding	Rank	State	Funding
1	Minnesota	638,176	18	Connecticut	168,308	35	Idaho	76,960
2	Iowa	505,801	19	North Carolina	159,901	36	Oklahoma	75,528
3	Ohio	458,260	20	New Mexico	150,186	37	West Virginia	75,000
4	New Jersey	390,000	21	Maine	147,333	38	Virginia	69,532
5	Illinois	381,465	22	Tennessee	146,041	39	Oregon	62,320
6	New York	351,615	23	District of Columbia	145,718	40	New Hampshire	48,554
7	Kentucky	349,337	24	Delaware	138,525	41	Utah	40,500
8	Colorado	340,000	25	California	130,000	42	Montana	34,500
9	Pennsylvania	339,700	26	Rhode Island	117,008	43	Mississippi	16,912
10	Michigan	334,976	27	Vermont	111,773	44	South Dakota	15,500
11	Kansas	262,070	28	North Dakota	110,000	45	Washington	7,500
12	Wisconsin	261,123	29	Wyoming	105,000	46	Arkansas	0
13	Alabama	248,966	30	Alaska	104,843	46	Florida	0
14	Georgia	240,246	31	Indiana	96,325	46	Hawaii	0
15	Arizona	212,709	32	South Carolina	96,244	46	Louisiana	0
16	Nebraska	175,320	33	Nevada	88,633	46	Maryland	0
17	Massachusetts	173,168	34	Texas	80,465	46	Missouri	0

Table 18. State SIRG Funding per FY 2002 Regression Model

Rank	State	Funding	Rank	State	Funding	Rank	State	Funding
1	Iowa	377,632	18	Wisconsin	205,159	35	New Mexico	110,868
2	Illinois	326,784	19	Missouri	175,168	36	Connecticut	104,501
3	Minnesota	310,643	20	West Virginia	148,985	37	Oregon	90,912
4	Ohio	309,903	21	New Jersey	145,866	38	Georgia	86,062
5	Pennsylvania	295,045	22	Florida	141,333	39	New Hampshire	84,513
6	Kansas	294,816	23	Michigan	137,634	40	Rhode Island	83,940
7	Indiana	289,927	24	Idaho	136,624	41	Vermont	79,064
8	California	280,840	25	Wyoming	135,402	42	South Carolina	75,536
9	Virginia	280,344	26	Alabama	133,147	43	Delaware	75,487
10	New York	279,622	27	Washington	122,616	44	Hawaii	75,370
11	Colorado	255,392	28	Massachusetts	121,531	45	District of Columbia	75,278
12	Nebraska	235,186	29	Maryland	121,275	46	Texas	61,576
13	North Dakota	229,814	30	Utah	116,058	47	Alaska	61,224
14	South Dakota	223,917	31	North Carolina	115,633	48	Louisiana	51,518
15	Montana	222,888	32	Maine	114,482	49	Arkansas	49,292
16	Tennessee	216,516	33	Arizona	113,739	50	Oklahoma	46,654
17	Kentucky	213,680	34	Nevada	113,134	51	Mississippi	38,066

Other interesting observations in the ranking difference between the 2 tables relate to the States of New Jersey and South Dakota. New Jersey received $390,000 in FY 2002, which was the 4th largest funding amount that year. Yet, according to the regression model for FY 2002, it was predicted to receive $145,866, which was the 21st largest funding amount. South Dakota, however, only received $15,500 in FY 2002, which was one of the lowest funding amounts that year. Yet, according to the regression model, it was predicted to receive $223,917, which was the 14th largest funding amount in that fiscal year. Interestingly, Scheberle (2004) also emphasized the low SIRG funding amount for South Dakota. She stated that while South Dakota is ranked highest of all states in terms of radon concentration per unit of livable space, it only received $18,500 in FY 2003, which was one of the lowest state funding amounts in that fiscal year.

Chapter 6 Conclusion

The objective of this research was to examine whether the SIRG program effectively targets states with the highest radon levels and largest populations. Consistent with the EPA's allocation of SIRG funds, the analysis was divided into a regional and a state-level analysis. In both analyses, 6 out of 7 regression models were statistically significant. The regression model for FY 2003 was the only model that was not statistically significant in the regional, as well as the state-level analysis. Research indicated that this insignificance was caused by the State of Pennsylvania, which had a ripple effect on EPA region 3. Pennsylvania is a top recipient of SIRG funding, but in FY 2003 the state received no SIRG funding at all. Likely the state could not afford the 40% matching requirement due to the budget crisis it faced in FY 2003/2004.

Based on the relatively high coefficients of determination of the 6 significant regional regression models, the conclusion is that the regional allocation of funds was indeed primarily related to a combination of county radon levels and population size. All of the coefficients of determination were higher than 0.8, which means that less than 20% of the variation in regional SIRG funding was attributed to other factors. According to the EPA, but not addressed in this research, these other factors are smoking rates, and a state's success in previous years of the SIRG program.

The state-level analysis showed a significantly different picture. Based on the relatively low coefficients of determination of the 6 significant state-level regression models, the conclusion is that the state allocation of funds was only marginally related to a combination of county radon levels and population size. The coefficients of determination for the significant state-level models were between 0.33 and 0.42, which means that in each fiscal year more than half of the variation in SIRG funding was attributed to other factors. The EPA acknowledges that its funding allocation models are only applied to the regional allocation and not to the state-level allocation. This research substantiated that the impact of county radon levels and population size on SIRG funding was significantly higher in the regional allocation than in the state-level allocation.

A likely explanation of why the EPA does not apply its regional allocation model to the state-level allocation of funds is that the state-level funding includes a matching requirement of at least 40% and the regional funding does not require any matching. This matching requirement causes difficulty for the SIRG program to meet its objective of targeting resources to the greatest risk areas and populations. States with relatively high radon levels and large populations may not be able to afford this matching requirement, and thus end up receiving less funding than states with relatively low radon levels and small populations.

Furthermore, states may have other pressing environmental issues as well, such as floods, earthquakes, or hurricanes, which generally attract much more public attention than radon. Most legislators are unlikely to make radon a high priority budget item, as long as radon fails to command much public attention. The State of Pennsylvania was facing a severe budget crisis in 2003, which resulted in more than 27% budget cuts for environmental protection programs. Consequently, Pennsylvania's SIRG program was completely canceled that year. On a similar note, the President's proposal to eliminate funding for the SIRG program altogether in FY 2013 is a direct result of the current federal budget crisis.

Based on the combined results of the regional and state-level analysis, the conclusion is that the SIRG program is only marginally effective in its ability to target funds to states with the highest radon levels and largest populations. The regional allocation of funds is primarily related to a combination of county radon levels and population size, while the state-level allocation of funds is only partially related to these variables. The state allocation of funds is too dependent on the ability and willingness of state legislators to fulfill the 40% minimum matching requirement. As a result, various states do not receive a funding amount that matches their radon risk potential.

The matching requirement needs to be addressed in order to make the state-level allocation of SIRG funds more dependent on county radon levels and population size. Ideally, the matching requirement would be canceled altogether, which would enable the EPA to apply the same funding allocation model that works rather well at the regional level, to the state-level allocation of SIRG funds. Naturally, the downside of eliminating the matching requirement is that the funding would decrease by a minimum of 40%.

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Appendix 1 Regional SPSS Outputs

Fiscal Year 2002

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	827634.09	558807.725	10
Population	28780391.40	16797795.119	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.526	.683	.724
	Population	.526	1.000	-.015	.598
	Zone1_Counties	.683	-.015	1.000	.511
	Zone2_Counties	.724	.598	.511	1.000
	Zone3_Counties	-.049	.518	-.298	.470
Sig. (1-tailed)	Funding	.	.059	.015	.009
	Population	.059	.	.484	.034
	Zone1_Counties	.015	.484	.	.066
	Zone2_Counties	.009	.034	.066	.
	Zone3_Counties	.446	.062	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.049
	Population	.518
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.446
	Population	.062
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.911[a]	.830	.694	309318.455	.830	6.093	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.037

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2332005129200.568	4	583001282300.142	6.093	.037[b]
	Residual	478389532218.375	5	95677906443.675		
	Total	2810394661418.943	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2191.246	238768.913		.009	.993
	Population	.015	.009	.458	1.761	.139
	Zone1_Counties	1703.407	1759.171	.314	.968	.377
	Zone2_Counties	3496.574	2804.798	.488	1.247	.268
	Zone3_Counties	-1518.039	1067.314	-.422	-1.422	.214

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.526	.619	.325	.503	1.986
	Zone1_Counties	.683	.397	.179	.323	3.095
	Zone2_Counties	.724	.487	.230	.222	4.506
	Zone3_Counties	-.049	-.537	-.262	.386	2.592

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.834	1.000	.01	.01	.01
	2	.764	2.240	.00	.00	.08
	3	.243	3.975	.29	.07	.09
	4	.119	5.686	.36	.44	.07
	5	.041	9.652	.33	.48	.75

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.00	.01
	2	.00	.19
1	3	.05	.11
	4	.06	.32
	5	.88	.38

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	223602.91	1892160.50	827634.09	509030.138	10
Residual	-383755.063	378908.188	.000	230552.364	10
Std. Predicted Value	-1.187	2.091	.000	1.000	10
Std. Residual	-1.241	1.225	.000	.745	10

a. Dependent Variable: Funding

Fiscal Year 2003

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	892117.35	670624.800	10
Population	29032641.80	16980276.908	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.529	.644	.719
	Population	.529	1.000	-.019	.597
	Zone1_Counties	.644	-.019	1.000	.511
	Zone2_Counties	.719	.597	.511	1.000
	Zone3_Counties	-.045	.522	-.298	.470
Sig. (1-tailed)	Funding	.	.058	.022	.010
	Population	.058	.	.479	.034
	Zone1_Counties	.022	.479	.	.066
	Zone2_Counties	.010	.034	.066	.
	Zone3_Counties	.451	.061	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.045
	Population	.522
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.451
	Population	.061
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.897[a]	.805	.650	397010.041	.805	5.170	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.050

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3259553739699.311	4	814888434924.828	5.170	.050[b]
	Residual	788084863293.297	5	157616972658.659		
	Total	4047638602992.608	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-63867.126	306602.272		-.208	.843
	Population	.018	.011	.447	1.604	.170
	Zone1_Counties	1470.104	2260.416	.226	.650	.544
	Zone2_Counties	4805.276	3601.468	.559	1.334	.240
	Zone3_Counties	-2042.677	1369.936	-.474	-1.491	.196

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.529	.583	.316	.501	1.997
	Zone1_Counties	.644	.279	.128	.322	3.102
	Zone2_Counties	.719	.512	.263	.222	4.510
	Zone3_Counties	-.045	-.555	-.294	.386	2.592

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.833	1.000	.01	.01	.01
	2	.765	2.239	.00	.00	.08
	3	.243	3.974	.29	.07	.09
	4	.118	5.688	.36	.44	.07
	5	.041	9.660	.33	.48	.75

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
1	1	.00	.01
	2	.00	.19
	3	.05	.11
	4	.06	.32
	5	.88	.37

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	147280.41	2136123.00	892117.35	601807.808	10
Residual	-441524.563	517012.000	.000	295913.813	10
Std. Predicted Value	-1.238	2.067	.000	1.000	10
Std. Residual	-1.112	1.302	.000	.745	10

a. Dependent Variable: Funding

Fiscal Year 2004

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	824806.50	608969.637	10
Population	29305892.40	17193002.829	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.531	.643	.727
	Population	.531	1.000	-.023	.598
	Zone1_Counties	.643	-.023	1.000	.511
	Zone2_Counties	.727	.598	.511	1.000
	Zone3_Counties	-.036	.528	-.298	.470
Sig. (1-tailed)	Funding	.	.057	.023	.009
	Population	.057	.	.474	.034
	Zone1_Counties	.023	.474	.	.066
	Zone2_Counties	.009	.034	.066	.
	Zone3_Counties	.461	.058	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.036
	Population	.528
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.461
	Population	.058
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.900[a]	.809	.657	356729.645	.809	5.307	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.048

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2701315970055.552	4	675328992513.888	5.307	.048[b]
	Residual	636280199490.949	5	127256039898.190		
	Total	3337596169546.500	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-44295.288	275444.423		-.161	.879
	Population	.016	.010	.443	1.598	.171
	Zone1_Counties	1289.651	2033.599	.218	.634	.554
	Zone2_Counties	4476.054	3240.242	.574	1.381	.226
	Zone3_Counties	-1856.733	1231.012	-.474	-1.508	.192

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.531	.581	.312	.496	2.016
	Zone1_Counties	.643	.273	.124	.322	3.110
	Zone2_Counties	.727	.526	.270	.221	4.521
	Zone3_Counties	-.036	-.559	-.295	.386	2.592

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.833	1.000	.01	.01	.01
	2	.765	2.238	.00	.00	.08
	3	.242	3.977	.30	.07	.09
	4	.118	5.692	.36	.44	.07
	5	.041	9.675	.33	.48	.76

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
1	1	.00	.01
	2	.00	.18
	3	.05	.11
	4	.06	.33
	5	.88	.37

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	151318.77	1949953.88	824806.50	547856.020	10
Residual	-447420.313	444609.125	.000	265890.579	10
Std. Predicted Value	-1.229	2.054	.000	1.000	10
Std. Residual	-1.254	1.246	.000	.745	10

a. Dependent Variable: Funding

Fiscal Year 2005

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	868134.00	546158.762	10
Population	29576591.00	17405638.277	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.546	.657	.768
	Population	.546	1.000	-.028	.599
	Zone1_Counties	.657	-.028	1.000	.511
	Zone2_Counties	.768	.599	.511	1.000
	Zone3_Counties	.013	.534	-.298	.470
Sig. (1-tailed)	Funding	.	.051	.020	.005
	Population	.051	.	.470	.034
	Zone1_Counties	.020	.470	.	.066
	Zone2_Counties	.005	.034	.066	.
	Zone3_Counties	.486	.056	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	.013
	Population	.534
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.486
	Population	.056
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.914[a]	.836	.704	297084.021	.836	6.354	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.034

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2243309966425.851	4	560827491606.463	6.354	.034[b]
	Residual	441294576652.150	5	88258915330.430		
	Total	2684604543078.000	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	61107.575	229403.208		.266	.801
	Population	.013	.008	.427	1.649	.160
	Zone1_Counties	1327.412	1696.010	.251	.783	.469
	Zone2_Counties	4040.843	2703.374	.577	1.495	.195
	Zone3_Counties	-1446.885	1025.286	-.412	-1.411	.217

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.546	.593	.299	.490	2.042
	Zone1_Counties	.657	.330	.142	.321	3.118
	Zone2_Counties	.768	.556	.271	.220	4.538
	Zone3_Counties	.013	-.534	-.256	.386	2.593

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.833	1.000	.01	.01	.01
	2	.766	2.237	.00	.00	.08
	3	.242	3.982	.30	.06	.09
	4	.118	5.700	.35	.44	.07
	5	.041	9.696	.33	.49	.76

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
1	1	.00	.01
	2	.00	.18
	3	.05	.11
	4	.06	.34
	5	.88	.36

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	311794.72	1878937.25	868134.00	499256.110	10
Residual	-392617.375	354264.938	.000	221433.355	10
Std. Predicted Value	-1.114	2.025	.000	1.000	10
Std. Residual	-1.322	1.192	.000	.745	10

a. Dependent Variable: Funding

Fiscal Year 2006

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	842163.20	516171.750	10
Population	29859321.20	17608241.988	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.625	.549	.810
	Population	.625	1.000	-.030	.602
	Zone1_Counties	.549	-.030	1.000	.511
	Zone2_Counties	.810	.602	.511	1.000
	Zone3_Counties	.148	.541	-.298	.470
Sig. (1-tailed)	Funding	.	.027	.050	.002
	Population	.027	.	.467	.033
	Zone1_Counties	.050	.467	.	.066
	Zone2_Counties	.002	.033	.066	.
	Zone3_Counties	.342	.053	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	.148
	Population	.541
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.342
	Population	.053
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.902[a]	.813	.664	299076.535	.813	5.452	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.046

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1950665613498.910	4	487666403374.727	5.452	.046[b]
	Residual	447233870410.690	5	89446774082.138		
	Total	2397899483909.600	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79247.844	231046.632		.343	.746
	Population	.012	.008	.421	1.514	.190
	Zone1_Counties	561.533	1709.805	.112	.328	.756
	Zone2_Counties	4427.539	2728.274	.669	1.623	.166
	Zone3_Counties	-1197.459	1032.279	-.361	-1.160	.298

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.625	.561	.292	.483	2.071
	Zone1_Counties	.549	.145	.063	.320	3.127
	Zone2_Counties	.810	.587	.313	.219	4.560
	Zone3_Counties	.148	-.460	-.224	.386	2.593

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.834	1.000	.01	.01	.01
	2	.767	2.236	.00	.00	.08
	3	.241	3.987	.30	.06	.09
	4	.118	5.710	.35	.43	.07
	5	.041	9.726	.34	.49	.76

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
1	1	.00	.01
	2	.00	.18
	3	.05	.11
	4	.06	.35
	5	.88	.35

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	427575.94	1727566.25	842163.20	465554.104	10
Residual	-368517.781	401515.344	.000	222918.488	10
Std. Predicted Value	-.891	1.902	.000	1.000	10
Std. Residual	-1.232	1.343	.000	.745	10

a. Dependent Variable: Funding

Fiscal Year 2007

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	854633.70	552732.663	10
Population	30157989.50	17803760.522	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.653	.533	.748
	Population	.653	1.000	-.035	.602
	Zone1_Counties	.533	-.035	1.000	.511
	Zone2_Counties	.748	.602	.511	1.000
	Zone3_Counties	.104	.549	-.298	.470
Sig. (1-tailed)	Funding	.	.020	.056	.006
	Population	.020	.	.462	.033
	Zone1_Counties	.056	.462	.	.066
	Zone2_Counties	.006	.033	.066	.
	Zone3_Counties	.387	.050	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	.104
	Population	.549
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.387
	Population	.050
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.895[a]	.801	.642	330936.009	.801	5.027	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.053

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2202027358065.904	4	550506839516.476	5.027	.053[b]
	Residual	547593210360.197	5	109518642072.039		
	Total	2749620568426.101	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-12160.615	255901.401		-.048	.964
	Population	.018	.009	.583	2.017	.100
	Zone1_Counties	1056.652	1892.408	.197	.558	.601
	Zone2_Counties	3363.119	3017.893	.475	1.114	.316
	Zone3_Counties	-1351.560	1142.608	-.380	-1.183	.290

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.653	.670	.402	.477	2.095
	Zone1_Counties	.533	.242	.111	.320	3.129
	Zone2_Counties	.748	.446	.222	.219	4.557
	Zone3_Counties	.104	-.468	-.236	.385	2.595

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.834	1.000	.01	.01	.01
	2	.768	2.234	.00	.00	.08
	3	.241	3.991	.31	.06	.09
	4	.117	5.736	.34	.43	.07
	5	.041	9.729	.34	.50	.75

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.00	.01
	2	.00	.18
1	3	.05	.11
	4	.06	.36
	5	.88	.34

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	364232.63	1841897.75	854633.70	494640.987	10
Residual	-373561.813	435097.656	.000	246665.137	10
Std. Predicted Value	-.991	1.996	.000	1.000	10
Std. Residual	-1.129	1.315	.000	.745	10

a. Dependent Variable: Funding

Fiscal Year 2008

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	852642.10	536112.083	10
Population	30437484.60	17973469.468	10
Zone1_Counties	107.00	103.109	10
Zone2_Counties	103.60	78.032	10
Zone3_Counties	103.70	155.526	10

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.650	.530	.785
	Population	.650	1.000	-.040	.602
	Zone1_Counties	.530	-.040	1.000	.511
	Zone2_Counties	.785	.602	.511	1.000
	Zone3_Counties	.134	.555	-.298	.470
Sig. (1-tailed)	Funding	.	.021	.057	.004
	Population	.021	.	.456	.033
	Zone1_Counties	.057	.456	.	.066
	Zone2_Counties	.004	.033	.066	.
	Zone3_Counties	.356	.048	.201	.085
N	Funding	10	10	10	10
	Population	10	10	10	10
	Zone1_Counties	10	10	10	10
	Zone2_Counties	10	10	10	10
	Zone3_Counties	10	10	10	10

Correlations

		Zone3_Counties
Pearson Correlation	Funding	.134
	Population	.555
	Zone1_Counties	-.298
	Zone2_Counties	.470
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.356
	Population	.048
	Zone1_Counties	.201
	Zone2_Counties	.085
	Zone3_Counties	.
N	Funding	10
	Population	10
	Zone1_Counties	10
	Zone2_Counties	10
	Zone3_Counties	10

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone1_Counties, Population, Zone2_Counties[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.904[a]	.817	.671	307429.314	.817	5.592	4

Model Summary[b]

Model	Change Statistics	
	df2	Sig. F Change
1	5[a]	.043

a. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2114181570961.502	4	528545392740.375	5.592	.043[b]
	Residual	472563914653.399	5	94512782930.680		
	Total	2586745485614.900	9			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone1_Counties, Population, Zone2_Counties

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29529.058	238133.335		.124	.906
	Population	.015	.008	.517	1.860	.122
	Zone1_Counties	685.219	1758.822	.132	.390	.713
	Zone2_Counties	4061.958	2801.899	.591	1.450	.207
	Zone3_Counties	-1351.650	1061.785	-.392	-1.273	.259

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.650	.640	.356	.473	2.112
	Zone1_Counties	.530	.172	.074	.319	3.132
	Zone2_Counties	.785	.544	.277	.220	4.552
	Zone3_Counties	.134	-.495	-.243	.385	2.597

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.834	1.000	.01	.01	.01
	2	.769	2.233	.00	.00	.08
	3	.241	3.992	.31	.06	.09
	4	.116	5.759	.34	.43	.07
	5	.040	9.732	.34	.50	.75

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
1	1	.00	.01
	2	.00	.18
	3	.06	.11
	4	.06	.37
	5	.88	.33

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	409713.59	1791543.88	852642.10	484674.183	10
Residual	-354721.719	437338.438	.000	229144.281	10
Std. Predicted Value	-.914	1.937	.000	1.000	10
Std. Residual	-1.154	1.423	.000	.745	10

a. Dependent Variable: Funding

Appendix 2 State-Level SPSS Outputs

Fiscal Year 2002

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$162,281.19	$146,759.824	51
Population	5643214.00	6336954.342	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.198	.555	.173
	Population	.198	1.000	-.027	.257
	Zone1_Counties	.555	-.027	1.000	.144
	Zone2_Counties	.173	.257	.144	1.000
	Zone3_Counties	-.216	.412	-.306	.152
Sig. (1-tailed)	Funding	.	.082	.000	.113
	Population	.082	.	.426	.034
	Zone1_Counties	.000	.426	.	.157
	Zone2_Counties	.113	.034	.157	.
	Zone3_Counties	.064	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.216
	Population	.412
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.064
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.617[a]	.380	.326	$120,441.957	.380	7.060	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.000	1.866

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	409634107837.399	4	102408526959.350	7.060	.000[b]
	Residual	667288189126.411	46	14506264981.009		
	Total	1076922296963.810	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	71569.646	30444.489		2.351	.023
	Population	.006	.003	.272	2.078	.043
	Zone1_Counties	2914.402	730.729	.498	3.988	.000
	Zone2_Counties	438.952	910.649	.059	.482	.632
	Zone3_Counties	-731.776	535.428	-.185	-1.367	.178

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.198	.293	.241	.787	1.270
	Zone1_Counties	.555	.507	.463	.865	1.156
	Zone2_Counties	.173	.071	.056	.900	1.111
	Zone3_Counties	-.216	-.198	-.159	.735	1.361

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.139	1.000	.03	.03	.02
	2	.947	1.820	.01	.03	.23
	3	.359	2.955	.00	.14	.25
	4	.329	3.090	.03	.78	.12
	5	.226	3.730	.94	.02	.38

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.03	.02
	2	.00	.29
1	3	.82	.04
	4	.01	.52
	5	.14	.13

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$38,927.50	$378,537.72	$162,281.19	$90,513.436	51
Residual	-$213,496.234	$326,022.219	$0.000	$115,523.867	51
Std. Predicted Value	-1.363	2.389	.000	1.000	51
Std. Residual	-1.773	2.707	.000	.959	51

a. Dependent Variable: Funding

Fiscal Year 2003

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$167,866.15	$176,997.992	51
Population	5692674.86	6403800.433	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.091	.428	.259
	Population	.091	1.000	-.029	.257
	Zone1_Counties	.428	-.029	1.000	.144
	Zone2_Counties	.259	.257	.144	1.000
	Zone3_Counties	-.235	.415	-.306	.152
Sig. (1-tailed)	Funding	.	.262	.001	.033
	Population	.262	.	.419	.034
	Zone1_Counties	.001	.419	.	.157
	Zone2_Counties	.033	.034	.157	.
	Zone3_Counties	.049	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.235
	Population	.415
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.049
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.512[a]	.262	.198	$158,556.617	.262	4.077	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.007	1.682

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	409965216726.716	4	102491304181.679	4.077	.007[b]
	Residual	1156449241956.658	46	25140200912.101		
	Total	1566414458683.374	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79939.658	40074.368		1.995	.052
	Population	.004	.004	.140	.977	.334
	Zone1_Counties	2355.591	961.867	.334	2.449	.018
	Zone2_Counties	1875.643	1198.759	.209	1.565	.125
	Zone3_Counties	-1060.819	705.735	-.222	-1.503	.140

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.091	.143	.124	.785	1.273
	Zone1_Counties	.428	.340	.310	.865	1.156
	Zone2_Counties	.259	.225	.198	.900	1.111
	Zone3_Counties	-.235	-.216	-.190	.733	1.364

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.138	1.000	.03	.03	.02
	2	.948	1.819	.01	.03	.23
	3	.359	2.955	.00	.14	.25
	4	.328	3.094	.03	.78	.11
	5	.226	3.729	.94	.02	.39

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.03	.02
	2	.00	.29
1	3	.82	.04
	4	.00	.52
	5	.14	.13

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$10,157.62	$337,951.66	$167,866.15	$90,550.010	51
Residual	-$273,889.281	$732,177.000	-$0.000	$152,082.165	51
Std. Predicted Value	-1.742	1.878	.000	1.000	51
Std. Residual	-1.727	4.618	.000	.959	51

a. Dependent Variable: Funding

Fiscal Year 2004

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$161,726.76	$148,729.322	51
Population	5746253.41	6468158.823	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.183	.464	.320
	Population	.183	1.000	-.032	.257
	Zone1_Counties	.464	-.032	1.000	.144
	Zone2_Counties	.320	.257	.144	1.000
	Zone3_Counties	-.252	.419	-.306	.152
Sig. (1-tailed)	Funding	.	.099	.000	.011
	Population	.099	.	.412	.034
	Zone1_Counties	.000	.412	.	.157
	Zone2_Counties	.011	.034	.157	.
	Zone3_Counties	.037	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.252
	Population	.419
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.037
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.600[a]	.360	.305	$124,019.635	.360	6.477	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.000	1.741

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	398500549167.426	4	99625137291.857	6.477	.000[b]
	Residual	707520014415.750	46	15380869878.603		
	Total	1106020563583.177	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	70501.641	31345.159		2.249	.029
	Population	.006	.003	.251	1.880	.066
	Zone1_Counties	2067.018	752.276	.348	2.748	.009
	Zone2_Counties	1882.810	937.610	.250	2.008	.051
	Zone3_Counties	-1155.965	552.917	-.288	-2.091	.042

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.183	.267	.222	.783	1.278
	Zone1_Counties	.464	.375	.324	.865	1.156
	Zone2_Counties	.320	.284	.237	.900	1.111
	Zone3_Counties	-.252	-.295	-.247	.731	1.369

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.138	1.000	.03	.03	.02
	2	.950	1.818	.01	.03	.23
	3	.359	2.955	.00	.13	.25
	4	.327	3.100	.03	.79	.11
	5	.226	3.729	.94	.02	.39

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.03	.02
	2	.00	.28
1	3	.82	.04
	4	.00	.52
	5	.14	.12

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$16,654.94	$336,623.19	$161,726.76	$89,274.918	51
Residual	-$232,150.297	$378,884.969	$0.000	$118,955.455	51
Std. Predicted Value	-1.625	1.959	.000	1.000	51
Std. Residual	-1.872	3.055	.000	.959	51

a. Dependent Variable: Funding

Fiscal Year 2005

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$170,222.35	$152,130.646	51
Population	5799331.57	6526246.926	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.203	.497	.313
	Population	.203	1.000	-.035	.257
	Zone1_Counties	.497	-.035	1.000	.144
	Zone2_Counties	.313	.257	.144	1.000
	Zone3_Counties	-.291	.423	-.306	.152
Sig. (1-tailed)	Funding	.	.077	.000	.013
	Population	.077	.	.405	.034
	Zone1_Counties	.000	.405	.	.157
	Zone2_Counties	.013	.034	.157	.
	Zone3_Counties	.019	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.291
	Population	.423
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.019
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.646[a]	.417	.367	$121,066.374	.417	8.238	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.000	1.851

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	482961589028.518	4	120740397257.130	8.238	.000[b]
	Residual	674225078897.129	46	14657066932.546		
	Total	1157186667925.647	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	74238.646	30599.912		2.426	.019
	Population	.007	.003	.300	2.349	.023
	Zone1_Counties	2243.757	734.295	.370	3.056	.004
	Zone2_Counties	1812.046	915.322	.235	1.980	.054
	Zone3_Counties	-1396.342	540.850	-.341	-2.582	.013

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.203	.327	.264	.779	1.284
	Zone1_Counties	.497	.411	.344	.865	1.156
	Zone2_Counties	.313	.280	.223	.900	1.111
	Zone3_Counties	-.291	-.356	-.291	.728	1.374

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.139	1.000	.03	.03	.02
	2	.951	1.816	.01	.03	.23
	3	.359	2.956	.00	.12	.26
	4	.324	3.110	.02	.80	.10
	5	.226	3.730	.94	.02	.39

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.03	.02
	2	.00	.28
1	3	.82	.05
	4	.00	.52
	5	.14	.12

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$3,900.90	$362,112.66	$170,222.35	$98,281.391	51
Residual	-$251,330.500	$408,727.594	-$0.000	$116,122.787	51
Std. Predicted Value	-1.692	1.952	.000	1.000	51
Std. Residual	-2.076	3.376	.000	.959	51

a. Dependent Variable: Funding

Fiscal Year 2006

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$165,130.04	$135,930.662	51
Population	5854768.86	6587479.061	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.272	.399	.305
	Population	.272	1.000	-.037	.259
	Zone1_Counties	.399	-.037	1.000	.144
	Zone2_Counties	.305	.259	.144	1.000
	Zone3_Counties	-.253	.430	-.306	.152
Sig. (1-tailed)	Funding	.	.027	.002	.015
	Population	.027	.	.399	.033
	Zone1_Counties	.002	.399	.	.157
	Zone2_Counties	.015	.033	.157	.
	Zone3_Counties	.036	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.253
	Population	.430
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.036
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.610[a]	.372	.318	$112,282.341	.372	6.820	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.000	1.755

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	343920325935.879	4	85980081483.970	6.820	.000[b]
	Residual	579936913166.043	46	12607324199.262		
	Total	923857239101.922	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	84778.873	28368.217		2.989	.004
	Population	.008	.003	.383	2.879	.006
	Zone1_Counties	1450.672	681.011	.267	2.130	.039
	Zone2_Counties	1538.516	849.232	.223	1.812	.077
	Zone3_Counties	-1354.984	503.104	-.370	-2.693	.010

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.272	.391	.336	.773	1.293
	Zone1_Counties	.399	.300	.249	.865	1.155
	Zone2_Counties	.305	.258	.212	.899	1.112
	Zone3_Counties	-.253	-.369	-.315	.723	1.382

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.141	1.000	.03	.03	.02
	2	.953	1.815	.01	.03	.23
	3	.359	2.958	.00	.10	.27
	4	.321	3.126	.03	.82	.09
	5	.226	3.729	.94	.02	.39

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.03	.02
	2	.01	.28
1	3	.82	.06
	4	.00	.52
	5	.14	.12

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$19,686.44	$379,709.69	$165,130.04	$82,936.159	51
Residual	-$214,518.906	$299,417.656	$0.000	$107,697.439	51
Std. Predicted Value	-1.754	2.587	.000	1.000	51
Std. Residual	-1.911	2.667	.000	.959	51

a. Dependent Variable: Funding

Fiscal Year 2007

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$164,634.06	$128,020.647	51
Population	5913331.27	6645750.127	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.358	.376	.331
	Population	.358	1.000	-.039	.260
	Zone1_Counties	.376	-.039	1.000	.144
	Zone2_Counties	.331	.260	.144	1.000
	Zone3_Counties	-.141	.435	-.306	.152
Sig. (1-tailed)	Funding	.	.005	.003	.009
	Population	.005	.	.393	.033
	Zone1_Counties	.003	.393	.	.157
	Zone2_Counties	.009	.033	.157	.
	Zone3_Counties	.162	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.141
	Population	.435
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.162
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.609[a]	.371	.316	$105,886.485	.371	6.772	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.000	1.947

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	303714712182.206	4	75928678045.551	6.772	.000[b]
	Residual	515749596502.617	46	11211947750.057		
	Total	819464308684.823	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	76206.991	26751.530		2.849	.007
	Population	.008	.003	.432	3.239	.002
	Zone1_Counties	1407.354	642.204	.276	2.191	.034
	Zone2_Counties	1437.055	800.930	.221	1.794	.079
	Zone3_Counties	-960.605	475.766	-.278	-2.019	.049

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Population	.358	.431	.379	.768	1.302
	Zone1_Counties	.376	.307	.256	.865	1.155
	Zone2_Counties	.331	.256	.210	.899	1.112
	Zone3_Counties	-.141	-.285	-.236	.719	1.390

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Population	Zone1_Counties
1	1	3.142	1.000	.03	.03	.02
	2	.955	1.814	.01	.03	.23
	3	.359	2.959	.00	.09	.28
	4	.318	3.142	.03	.83	.08
	5	.226	3.730	.94	.02	.39

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
	1	.03	.02
	2	.01	.27
1	3	.82	.06
	4	.00	.52
	5	.14	.12

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$40,947.98	$396,416.56	$164,634.06	$77,937.759	51
Residual	-$207,416.578	$267,526.156	$0.000	$101,562.749	51
Std. Predicted Value	-1.587	2.974	.000	1.000	51
Std. Residual	-1.959	2.527	.000	.959	51

a. Dependent Variable: Funding

Fiscal Year 2008

Descriptive Statistics

	Mean	Std. Deviation	N
Funding	$167,184.73	$133,369.130	51
Population	5968134.24	6711363.558	51
Zone1_Counties	20.98	25.064	51
Zone2_Counties	20.31	19.715	51
Zone3_Counties	20.33	37.109	51

Correlations

		Funding	Population	Zone1_Counties	Zone2_Counties
Pearson Correlation	Funding	1.000	.301	.357	.347
	Population	.301	1.000	-.041	.260
	Zone1_Counties	.357	-.041	1.000	.144
	Zone2_Counties	.347	.260	.144	1.000
	Zone3_Counties	-.143	.440	-.306	.152
Sig. (1-tailed)	Funding	.	.016	.005	.006
	Population	.016	.	.387	.033
	Zone1_Counties	.005	.387	.	.157
	Zone2_Counties	.006	.033	.157	.
	Zone3_Counties	.158	.001	.015	.144
N	Funding	51	51	51	51
	Population	51	51	51	51
	Zone1_Counties	51	51	51	51
	Zone2_Counties	51	51	51	51
	Zone3_Counties	51	51	51	51

Correlations

		Zone3_Counties
Pearson Correlation	Funding	-.143
	Population	.440
	Zone1_Counties	-.306
	Zone2_Counties	.152
	Zone3_Counties	1.000
Sig. (1-tailed)	Funding	.158
	Population	.001
	Zone1_Counties	.015
	Zone2_Counties	.144
	Zone3_Counties	.
N	Funding	51
	Population	51
	Zone1_Counties	51
	Zone2_Counties	51
	Zone3_Counties	51

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zone3_Counties, Zone2_Counties, Zone1_Counties, Population[b]	.	Enter

a. Dependent Variable: Funding

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.571[a]	.326	.268	$114,127.674	.326	5.570	4

Model Summary[b]

Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	46[a]	.001	1.780

a. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

b. Dependent Variable: Funding

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	290210451583.731	4	72552612895.933	5.570	.001[b]
	Residual	599155789532.426	46	13025125859.401		
	Total	889366241116.157	50			

a. Dependent Variable: Funding

b. Predictors: (Constant), Zone3_Counties, Zone2_Counties, Zone1_Counties, Population

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	79943.775	28828.262		2.773	.008
	Population	.007	.003	.361	2.607	.012
	Zone1_Counties	1356.996	692.161	.255	1.961	.056
	Zone2_Counties	1732.180	863.304	.256	2.006	.051
	Zone3_Counties	-944.998	513.938	-.263	-1.839	.072

Coefficients[a]

Model		Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)					
	Population	.301	.359	.316	.764	1.308
	Zone1_Counties	.357	.278	.237	.866	1.155
	Zone2_Counties	.347	.284	.243	.899	1.112
	Zone3_Counties	-.143	-.262	-.223	.716	1.396

a. Dependent Variable: Funding

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions Population	Variance Proportions Zone1_Counties
1	1	3.143	1.000	.03	.03	.02
	2	.956	1.813	.01	.03	.23
	3	.359	2.960	.00	.09	.28
	4	.316	3.152	.03	.83	.08
	5	.226	3.729	.94	.02	.39

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Zone2_Counties	Zone3_Counties
1	1	.03	.02
	2	.01	.27
	3	.82	.06
	4	.00	.52
	5	.14	.12

a. Dependent Variable: Funding

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	$44,956.14	$369,700.56	$167,184.73	$76,185.360	51
Residual	-$180,700.578	$305,990.375	-$0.000	$109,467.419	51
Std. Predicted Value	-1.604	2.658	.000	1.000	51
Std. Residual	-1.583	2.681	.000	.959	51

a. Dependent Variable: Funding