LOGISTIC REGRESSION

Adequate yearly progress (AYP) is the measure by which schools, districts, and states are held accountable for student performance under Title I of the No Child Left Behind Act of 2001 (NCLB) Under NCLB, states are required to show that public school students are making yearly progess toward meeting state academic content standards. The goal is to have all students reaching proficient levels in reading and math by 2014 as measured by performance on state tests.

To comply with NCLB, public school students in Minnesota take the Minnesota Comprehensive Assessments (MCA) in reading and mathematics each year from grade 3 to grade 8. The MCA in reading is administered again in grade 10 and the mathematics assessment is readministered in grade 11. Additionally, MCAs in science (grades 5, 8, and 10) and in writing (grade 9) are also taken. The results of the MCA's are then compared to prior years, and, based on the state-determined AYP standards, used to determine if the school or district has made adequate progress towards the proficiency goal.

AYP for a school or district is calculated for several student sub-groups and consists of four areas: (1) Participation on MCA's); (2) Proficiency on MCA's; (3) Attendance; and (4) Graduation rate.If a school or district does not meet the established performance criteria, then either the school building or school district is identified as "needing improvement."

If a school or district fails to make AYP for two consecutive years, they are placed in the 'Choice' School Improvement Status. NCLB specifies a number of consequences for those schools receiving Title I funds, including notifying parents of that the school is in need of improvement, providing students an option to transfer to another public school within the district, providing tutoring, to students or even restructuring the school.

In this assignment, you will have an opportunity to examine school district data from the state of Minnesota. *Your specific focus is examining the variability in AYP status for Minnesota schools and evaluating what predictors explain that variation.*

EPsy 8220—Methods for Categorical Response Data
Lab #1
17pts.

Assignment Guidelines: Paralleling the analysis we have carried out in class, conduct the statistical analyses necessary to complete this assignment. Please submit a word-preocessed document that responds to each of the questions below. Any R output in the documentation file should be typeset and graphics should be resized so that they don't take up more room than necessary. *All tables and figures should be publication quality (i.e., follow the APA guidelines).*

Statistical Analyses

Summarize the sample data.

1. Create a publication quality table that summarizes the distribution of AYP status conditioned on average teacher salary. Categorize average teacher salary by trichotomizing it so that there are roughly equal numbers of schools in each category. **(3pts)**

Examine the correlation matrix among variables.

2. Construct a publication quality table that presents the estimated correlations among 2012 AYP status, average teacher salary, poverty, and enrollment. **(2pts)**

3. Describe what we learn from the table of correlations. **(2pts)**

4. Explain what these results foreshadow for multiple regression models predicting 2012 AYP status. **(1pt)**

Regress 2012 AYP status on average teacher salary.

5. Present the fitted regression equation. **(1pt)**

6. Interpret the β_0 estimate using the substantive context. **(1pt)**

7. Interpret the β_1 estimate using the substantive context. **(1pt)**

Report the Regression Results

8. Write some text for a results section of an empirical article in which you report the results of the model you fitted. Be sure to report all pertinent information required by APA. **(3pts)**

Graphically display the results from your model.

9. Create a display that visually represents your fitted model. Be sure to viually show the uncertainty in the model on your plot. **(2pts)**

10. Write 1–2 sentences that could be added to the text of an empirical article in which you interpret the plot. **(1pt)**