Project Examples: Linear Regression Project

MAT 1272 and 1372 – Statistics

**Project Design**

Select 2 quantitative variables that you believe may be related in a specific population.

Example variables and corresponding research questions and hypotheses:

1) Batting averages and salaries among professional baseball players

**Population**: Professional baseball players

**Explanatory Variable**: Batting average

**Response Variable**: Annual salary

**Research Question**: Is there a correlation between professional baseball players’ batting averages and their salaries?

**Hypothesis**: Players with higher batting averages have higher salaries. [**positive correlation is hypothesized**]

2) Calories and fat content in grocery store snack foods

**Population**: Grocery store snack foods

**Explanatory Variable**: Fat content in grams per serving

**Response Variable**: Calories per serving

**Research Question**: Is there a correlation between snack food calories and fat content?

**Hypothesis**: Snack foods with higher fat content also have higher calories. [**positive correlation is hypothesized**]

3) Engine horsepower and gas mileage in automobiles

**Population**: Automobiles

**Explanatory Variable**: Engine horsepower (HP)

**Response Variable**: Gas mileage (miles per gallon)

**Research Question**: Is there a correlation between automobiles’ horsepower and their gas mileage?

**Hypothesis**: Cars with higher horsepower have lower gas mileage. [**negative correlation is hypothesized**]

4) Perfectionism score and “OCD” score among NGCSU students (*see surveys in online class resources*)

**Population**: NGCSU students

**Independent Variable**: Perfectionism score

**Dependent Variable**: OCD score

**Research Question**: Is there a correlation between NGCSU students’ perfectionism and OCD scores?

**Hypothesis**: Students with higher perfectionism scores have higher OCD scores. [**positive correlation is hypothesized**]