**ANOVA Project**

**STAT301-50**

**Spring 2025**

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**An Analysis of Utility Meter Readings**

**Data Overview and Project Goals:**

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* Introduce your dataset
* Introduce your research question
* Introduce the variables chosen, including their meaning and type
* Introduce your null and alternative hypotheses

This project investigates utility meter readings collected from meters during the time of 5/1/2025 to 6/5/2024 from households that use central air conditioning, who use over 700 Kwh per year. All properties are residential and located in Minnesota. These households were part of a load control program, where the utility company reduces electricity during peak demand. Importantly, Load control happens to all of the meters at the same time, so direct comparison is possible.

Does load control significantly affect electricity usage?.

What is the effect of humidity and temperature on usage reading?

In this analysis, we will be utilizing the data to determing if there is significance of the Load Control on usage, measured in the Meter readings.

The first analysis has the formula :

Where

The original data set used contains X rows, and 9 values. Timeframe, StartTime, EndTime, MeterID, Reading, Temperature, Humidity, HeatIndex, LoadControl.

Variables used in this analysis include dendependent variable Reading(and the independent variables are Temperature (, Humidity ( , HeatIndex (X) , and LoadControl (

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For the first research question- the impact of load control on electricity usage- we define the following hypothesis:

*Methods*

* Introduce the appropriate analysis chosen
* Explain the reason of choosing the analysis (why the analysis is correct and appropriate?)
* Explain how to processed the data (anything done to data cleaning, missing values etc.)

**Conclusions:**

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