**1B ANOVA**

**Introduction**

An extension of the independent two-sample t-test is the ANOVA. When faced with more than two groups, it may be utilized to compare means. One factor variable, sometimes identified as a grouping variable, is applied in one-way ANOVA to separate the data into multiple categories.

**Assumptions**

Assumption #1: One variable consists of two categorical, independent groups.

Assumption #2: Must have independence of observations.

**Null hypothesis**

**Null hypothesis**: There is no significant difference on weight between treatment groups.

**Dataset and Problem**

The PlantGrowth were separated into 2 groups namely: “weight” & “group” and the group was categorized into 3 based on which group will the plant grow namely: "ctrl", "trt1", and "trt2". These 3 groups formed an independent variable called group. This dependent variable was called “weight”.

#### Sample Data

A screenshot of a computer program

Description automatically generated

**Checking of Assumptions**

Assumption #1: One variable consists of three categorical, independent groups.

**Remark.** The independent variable is physical activity which is categorized into independent groups: *ctrl*, *trt1*, and *trt2*.

Assumption #2: Must have independence of observations.

**Remark.** Each observation is independent with each other as there is no significant difference on weight between treatment groups.

#### Raincloud plots

A chart with colored squares and numbers

Description automatically generated

A graph with lines and dots

Description automatically generated

A diagram of a box with different colored squares

Description automatically generated with medium confidence

A screenshot of a computer code

Description automatically generated

**Reporting**

--------------

**Source**

*R Dataset / Package datasets / PlantGrowth | R Datasets*. (n.d.). <https://r-data.pmagunia.com/dataset/r-dataset-package-datasets-plantgrowth>