

Basic Course on R: Hypothesis Testing and Confidence Intervals 1 Practical

Elizabeth Ribble*

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*emcclel3@msudenver.edu

1 Baby Data

1. Read in the data “R_data_January2015.csv” with a header and row names from the first column. Assign it to the object `babydata` and allow strings be converted to factors. Attach the data to the environment.
2. What are the dimensions of `babydata`? What is the class? Answer these questions separately with two functions and then together with one function.
3. Answer the following questions pertaining to the variable `SAH`:
 - (a) What are the 20% quantiles of `SAH`?
 - (b) What are the mean, median, variance and standard deviation of `SAH`?
 - (c) Create a stem and leaf plot of `SAH`.
 - (d) Create a histogram and a horizontal boxplot of `SAH` in one graphics window where the plot of the histogram is above the boxplot.
 - (e) Utilize all 3 graphs to describe the shape of the distribution of `SAH`.
 - (f) Log-transform `SAH` (assign it to `logSAH`).
 - (g) What are the 20% quantiles of `logSAH`?
 - (h) What are the mean, median, variance and standard deviation of `logSAH`?

- (i) Create a stem and leaf plot of `logSAH`.
 - (j) Create a histogram and a horizontal boxplot of `logSAH` in one graphics window where the plot of the histogram above the boxplot.
 - (k) Utilize all 3 graphs to describe the shape of the distribution of `logSAH`.
 - (l) What did the log transformation do to the values of `SAH`?
 - (m) Take a random sample of size 50 from `logSAH` and make a histogram. Does this distribution have a similar shape compared to that of all `logSAH` values?
 - (n) Take a random sample of size 50 with replacement from `logSAH` and make a histogram. Does this distribution have a similar shape compared to that of all `logSAH` values?
4. Answer the following questions pertaining to the variable `medication`:
- (a) Use a function to create frequency table of the number of mothers taking medication and not taking medication.
 - (b) Calculate the percent of the mothers who are taking medication; what is the percentage?
5. Answer the following questions pertaining to the variable `educational_level`:
- (a) Create a frequency table of the number of mothers in each education level.

6. Answer the following questions pertaining to the variable **Status**:

- [illegible]