Case 10: Chip Thickness by Machines

A semiconductor manufacturing facility wants to understand the inherent variation in chip thickness produced by different wafer coating machines. They have randomly selected 20 identical machines from the facility and want to quantify the natural machine-to-machine variation in their production line. Each machine is maintained under identical conditions, uses the same materials, and follows the same protocols. (download data)

Case:

Initial Questions

1. What are the research objectives?

2. What are the statistical questions?

3. What is the response variable, and what is the data type of the response variable?

4. What are the explanatory variables of interest?

5. Are there covariates?

6. What is the population of interest?

7. What is the subject, and what is the number of distinct subjects?

8. Are there subject-level data?

9. Are response variables dependent (repeated measures / clustered subjects)?

10. Are the subjects selected randomly?

11. Are the subjects randomly assigned to different groups?

Initial Thoughts

