

Case 34: Environment Noise Level and Exam Confidence

An education researcher investigates whether the level of noise in a student's study environment is associated with their self-reported confidence before an exam. While excessive noise may be distracting, students may adapt differently, so only a weak association is expected. The researcher collects data from 30 student volunteers, recording their study environment noise level (1 = Very Quiet, 2 = Quiet, 3 = Moderate, 4 = Noisy, 5 = Very Noisy) and their self-reported exam confidence (1 = Very Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Very High) before a major exam. The goal is to determine if there is a significant association between study environment noise level and exam confidence. ([download data](#))

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