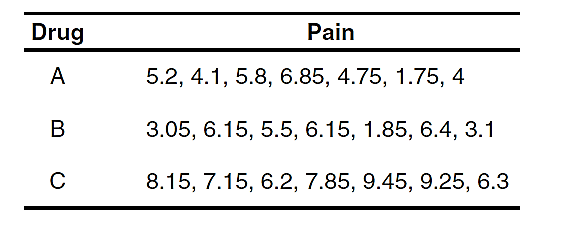
**2021年春季应用语言学研究方法（量化研究）作业**

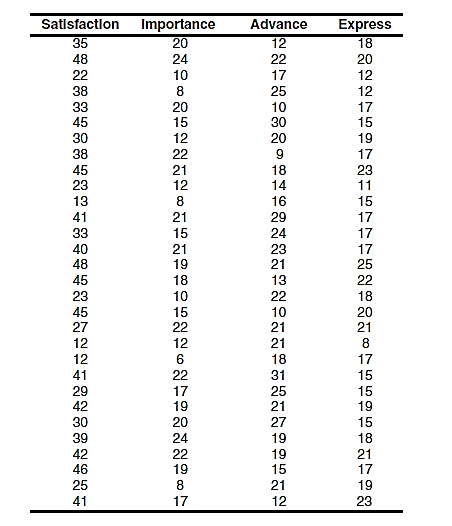
**Task 1.** A medical researcher wanted to investigate the effect of different pain medications on people suffering from migraine headaches. Twenty-one people who had recently seen a doctor for migraine headaches were randomly assigned to receive one of three pills: drug A, drug B, or a placebo. While taking the appropriate pill, each participant recorded their pain level three times a day at regular intervals for one week (pain was recorded on a 1 to 10 scale, with higher scores indicating greater pain). The average pain level over the one-week period was calculated for each participant and is reported in the following figure.



Enter the data in SPSS and perform the appropriate analyses to answer the questions below.

1. State the null and alternative hypotheses.
2. State a research question for the data.
3. Test for the assumption of equal variances. Do the data suggest unequal variances between the groups? Test at *α*=0.05.
4. Is there a significant difference in the reported pain levels between the groups? Test at*α*=0.05.
5. What is the effect size for the overall ANOVA? Would you characterize the effect size as small, medium, or large?
6. If the overall ANOVA is significant, briefly summarize the results of Tukey’s post hoc procedure.
7. Write the results of the study using APA format as appropriate (be sure to include the results of Tukey’s test if the overall ANOVA is significant).

**Task 2.** An industrial psychologist examined predictors of job satisfaction among 30 employees of different companies. The predictors investigated included the importance of work (**importance**), the opportunity for advancement in the company (**advance**), and the ability to express ideas to the boss (**express**). The criterion variable is job satisfaction (**satisfaction**). Higher scores on each of the variables indicate higher levels of the characteristic of interest (e.g., higher scores on satisfaction indicate greater satisfaction with one’s job). The data are provided in the following figure.



Enter the data in SPSS and perform the appropriate analyses to answer the questions below.

1. Write a research question for each of the predictors and for the overall regression model.
2. What is for the model? Is the overall model significant?
3. Which, if any, of the predictors are significant? Which, if any, predictors are not significant?
4. What is the effect size for the overall regression model? Would you characterize the effect size as small, medium, or large?
5. Write a regression equation for the data.
6. Write the results using APA format as appropriate.