

Statistics II Midterm #1

Student Name: _____

Student ID Number: _____

Problem background:

You have recently received the task to determine if **Dividend Payout** is affected by the financial strength of firms (measured by the “risk” variable) for the Dividend. Please complete the task by taking the following steps for answering given questions below.

Questions:

1. Create a pivot table to display only the variables you need to analyze. **Be sure to create a pivot table in a new worksheet.**
2. Use the Pivot table to find the samples of Dividend Payout . You must list the two samples in the two columns other than the pivot table. **Make sure to label them appropriately.**
3. Conduct a T-Test analysis using the T-Test tool for the information gathered in question #2
4. Based on the output from the T-Test Analysis, Which risk level has a higher Dividend Payout? Which of the samples had the higher mean based on the descriptive statistics?

Room for solutions below:

5. After collecting the data about the Dividend Payout based on the financial strength (based on the “ risk “ variable.) Conduct a **Traditional Hypothesis Testing Method** with **Test Statistics**. The Significance level for your inference is 0.05. The following information is required for this question (must also be able to conduct P-value method and confidence interval method as well).
 - Your Hypothesis;
 - Significance Level;
 - Detailed Analysis and calculation steps (what are the stats being compared to draw a conclusion, and how to find the values for them.);
 - Conclusion for your reasoning;
 - Your interpretation of the conclusion under the context given the problem background.

Room for Solutions below:

6. Based on the data collected from the previous questions, there is also a different level aside from “ low “ and “ high” risk variables based on the payout of a firm. Prepare the following to find out if there is a treatment effect from financial strength on dividend payout.
 - Data preparation: In addition to the two samples, look into the middle or “ave “risk variable;
 - Once completed, copy/paste the results of the sample in the column with the two other samples and label them appropriately.
 - One you have gathered all three samples, conduct an ANOVA analysis in Excel for treatments that involve single factor;
 - With the output from the ANOVA analysis in Excel, please conduct a Traditional Hypothesis Test using P-value to find the treatment effect from financial strength of firms on Dividend Payout. The significance level for your inference is 0.05. The following information is required for this test:
 - Your Hypothesis;
 - Significance Level;
 - Detailed Analysis and calculation steps (what are the stats being compared to draw a conclusion, and how to find the values for them.);
 - Conclusion for your reasoning;
 - Your interpretation of the conclusion under the context given the problem background.

Room for solutions Below:

Furthermore, conduct the following data collection and preparation for the information for Question 6:

- Difference in dividend payout between the Low and High Risk Levels
- Conduct a T-Test Analysis using the appropriate T-Test analysis in Excel
- Use the appropriate tool in Excel to calculate Descriptive statistics for the sample of the difference between the low and high risk levels
- Conduct a test using Confidence interval for 95%. The significance level is 0.1. Also use P-value and Test Statistic methods for this question.

Room for Problem Solutions Below: